SOAP

SANITARY CHEMICALS

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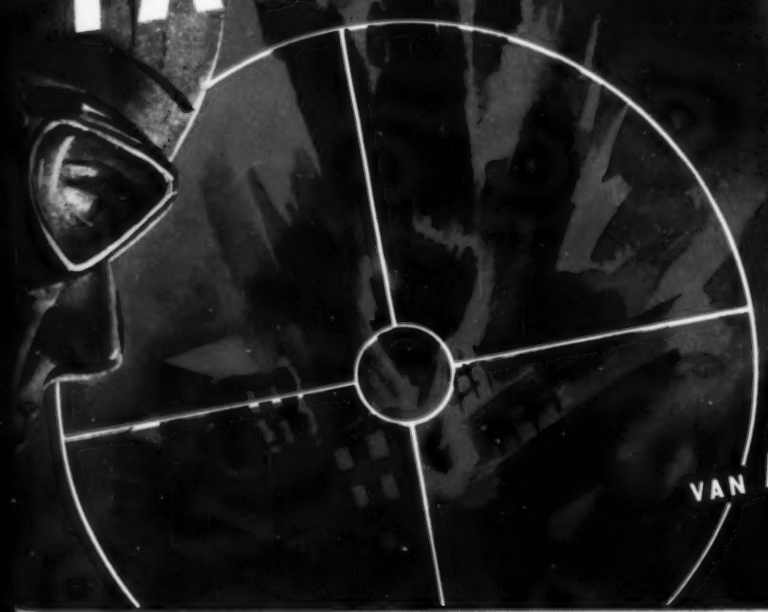
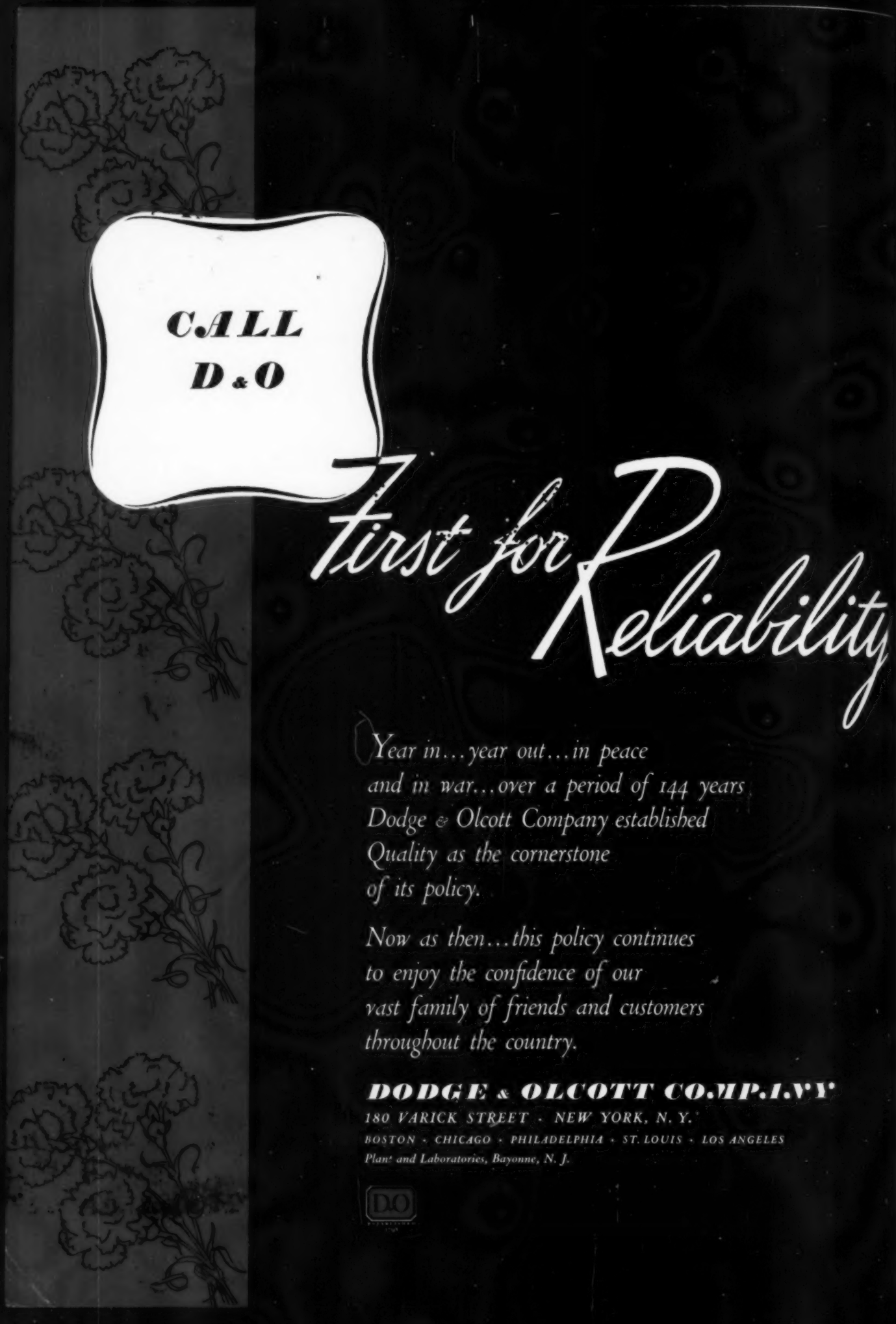
TARGETS...



In every profession long and arduous training is imperative if the target is to be struck squarely. Such training, coupled with uncommon inventiveness, is possessed by the chemists who work for you on soap-perfuming.

VAN AMERINGEN-HAEBLER, INC.
315 FOURTH AVENUE · NEW YORK

December 1943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First for Reliability
Year in... year out... in peace
and in war... over a period of 144 years
Dodge & Olcott Company established
Quality as the cornerstone
of its policy.
Now as then... this policy continues
to enjoy the confidence of our
vast family of friends and customers
throughout the country.
DODGE & OLCOTT COMPANY
180 VARICK STREET · NEW YORK, N. Y.
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D|O

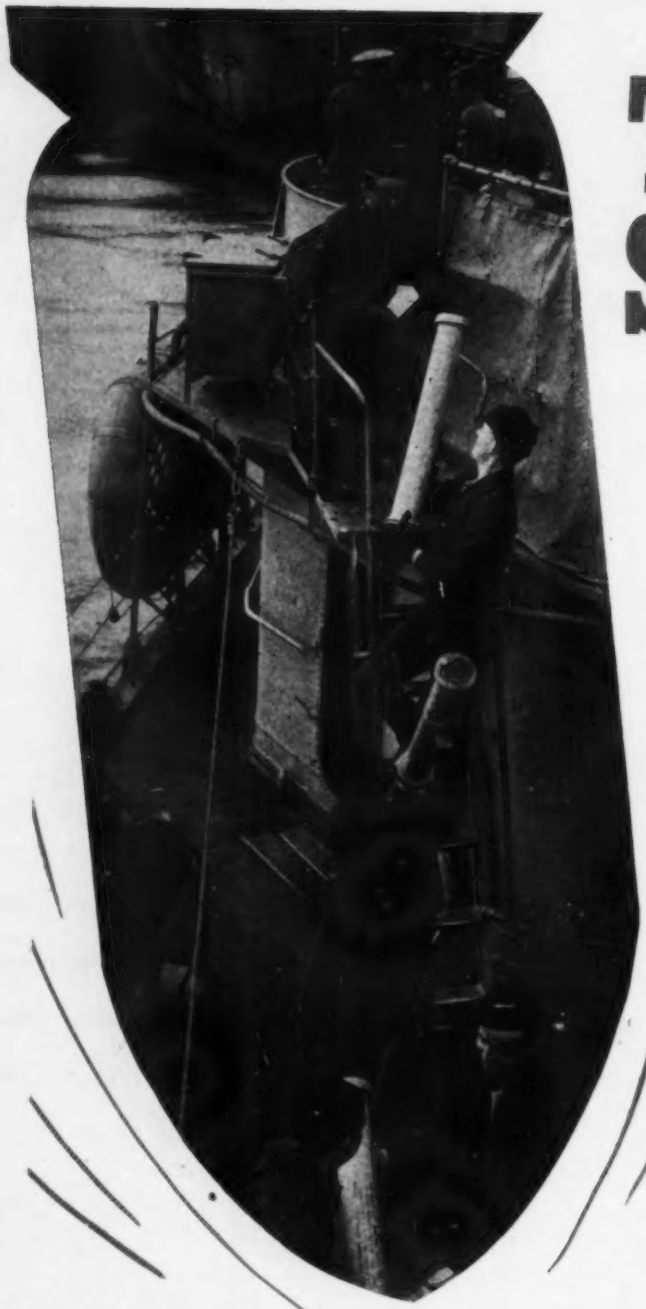
The Time Is NOW!

Now is the time to be interested in the post-war period. We are all eagerly planning for the time when business conditions will return to normal and some of the present-day headaches will vanish. But since the war is not yet won, there is still a job to be done on the home front. We are exerting every effort NOW to keep our jobbers supplied with sanitary chemicals and maintenance materials. War or peace, we are pledged to keep the jobber going.

Fuld Brothers

702 South Wolfe Street, Baltimore, Maryland • 2444 East 8th Street, Los Angeles, California

Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers



Official U. S. Navy Photograph

TROUBLE SHOOTERS

Trouble shooters are important these days on the business as well as on the military front.

Never have there been so many small details that needed attention in order to keep business running along smoothly.

Meticulous attention to detail and prompt attention to minor troubles and details as they come along are necessary to the proper function of the industrial machinery behind the war effort.

The composite business man is doing his share in the war effort in his daily conscientious attention to the new and ever increasing detail of today's business.

Products which are available to the perfumer at reasonable prices:

OIL OF WHITE CEDAR

OIL OF CEDAR LEAF AMERICAN
Exceptionally Fine Quality

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PHENYL ETHYL ALCOHOL

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HYDRATROPIC ALDEHYDE

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Volume XIX Number 12

SOAP *and* SANITARY CHEMICALS

Reg. U. S. Pat. Office

DECEMBER 1943

SANITARY Products Section, which forms a part of every issue of SOAP, Begins on page 75.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Contents

- Editorials 23
- Synthetic Detergents 25
  By Earl K. Fischer
- The Outlook for Soap Dispensers..... 30
- As It Looks in Washington..... 33
- Holiday Gift Soap Market..... 36
- Manufacture of Extruded Soap..... 61
- N.A.I.D.M. Meeting 108
- Insect Food Damage..... 113
  By Virginia Fairfield
- Gesarol in Stable Fly Control..... 117
  By R. Wiesmann
- Agricultural Insecticides 121
- Formulation of Rat Baits..... 127
  By Justus C. Ward
- Livestock Insect Control—Part II..... 131
  By Dr. E. G. Thomsen and Dr. M. H. Doner
- Bids and Awards..... 49
- New Trademarks 51
- Raw Material Markets..... 55
- Raw Material Prices..... 57
- Products and Processes..... 67
- New Patents 69
- New Equipment 71
- Classified Advertising 157
- Advertisers' Index 161

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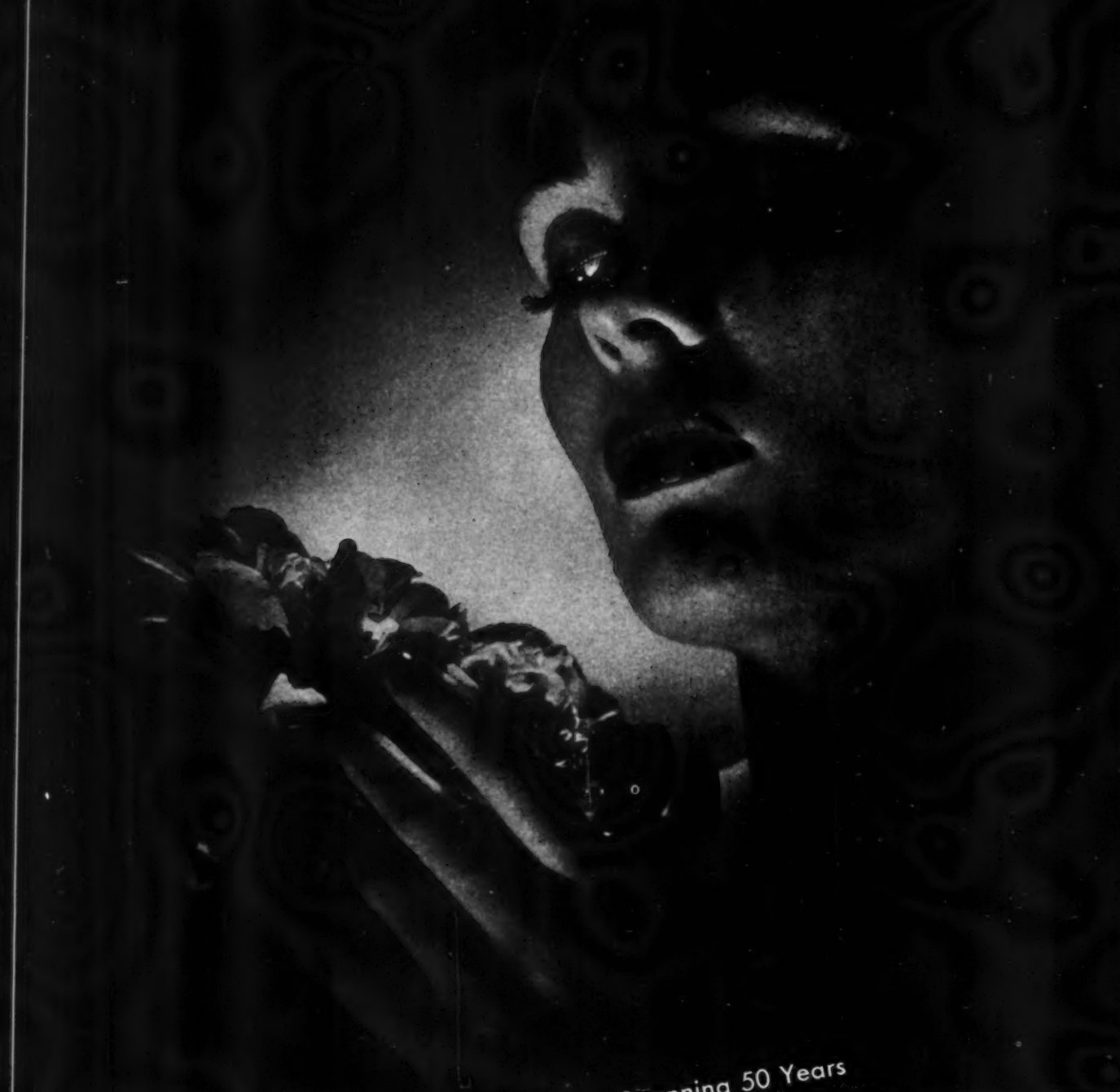
AROMATICS

SYNTHETIC



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EXTRA WHITE BLEACHED
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OF

WAXES

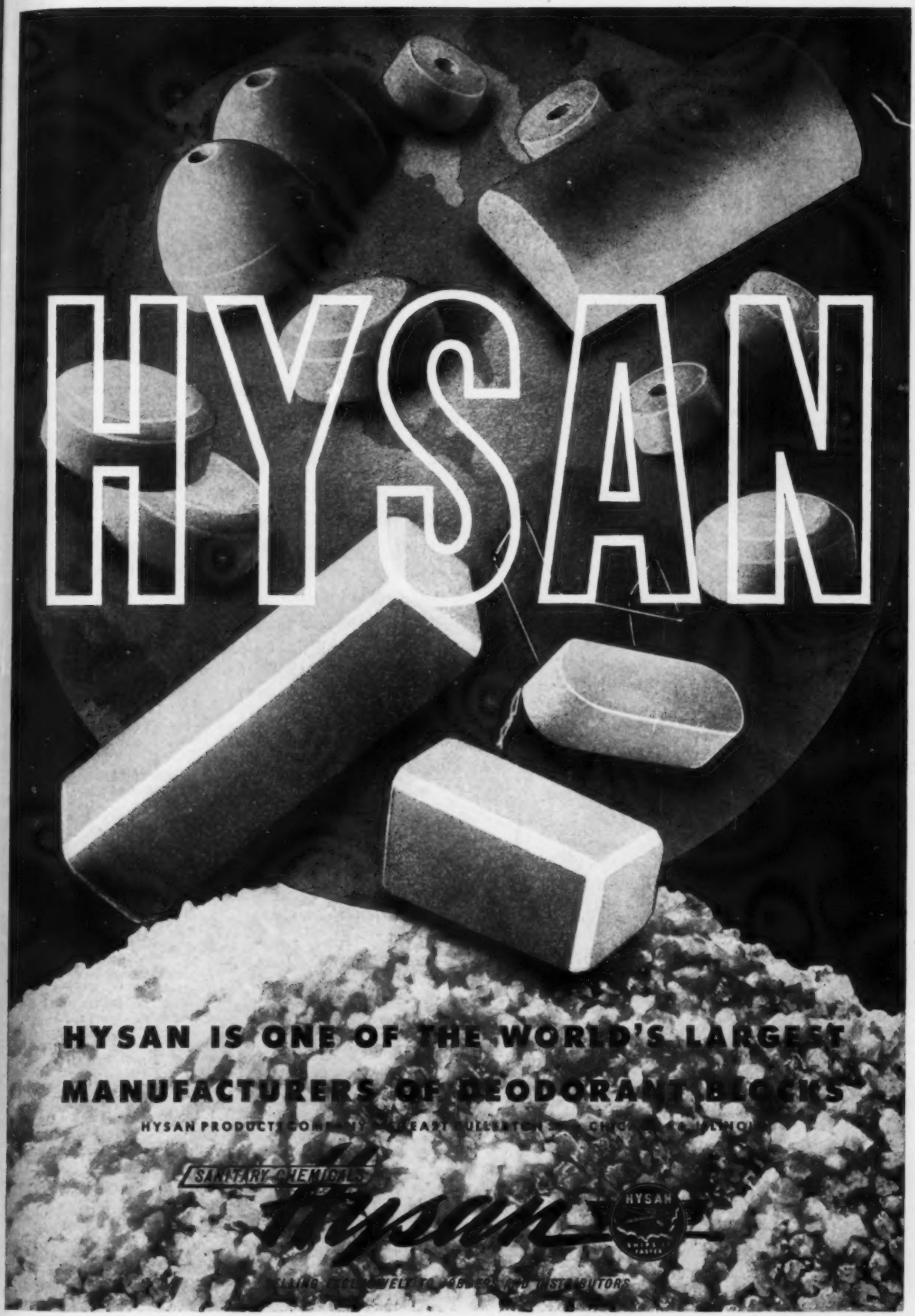
To all our friends . . .

United for Victory . . .
whether at home
or facing the foe,
We wish

EVERY JOY THAT CHRISTMAS CAN BRING

and PEACE
IN THE COMING YEAR!

Tombarel PRODUCTS CORPORATION
12 East 22nd Street, N.Y. 10, L. J. Zollinger, President
Original Perfume Creations • Basic Perfume Materials
Aromatic Chemicals and Essential Oils


HYSAN
HYSAN IS ONE OF THE WORLD'S LARGEST
MANUFACTURERS OF DEODORANT BLOCKS
SANITARY CHEMICALS
hysan
HYSAN

Mr. Soaper

Reprinted from Soap. Nov., 1943

Our own immediate reaction was that this seems to be a powerful lot of edible fat to switch off the food line under present conditions. Doing a little quick figure juggling, we wonder why it might not have been better to keep our butter at home for domestic use, send the edible fat to Russia *and push more of such inedibles as tall oil into soap.* We wondered, too, just how the American housewife can be expected to react when she discovers that hundreds of millions of pounds of a rationed commodity, that she has to give red stamps for, is going into soap. The fact that she, and not the soap maker, is the end user of this fat is all too likely to be overlooked.

Secondly, it would seem that lard is a trifle expensive as a soap raw material if other fatty raw materials are available. How can the soap maker, for instance, be expected to pay approximately five cents a pound premium for an edible raw material, and still continue to sell his finished soaps under present ceilings? The answer, apparently, is that some soap makers are doing just this, to judge by the substantial edible fat consumption in this one reported quarter.

Now that you are permitted to make more soap, the availability of fats, oils and rosin is an important consideration. With no relief on ceiling prices for soap, the cost of raw materials is also paramount. Tall Oil, as disclosed in the typical analyses shown below, combines both fatty acids and rosin acids—both of which are good features for the soap kettle. Prices on Crude Tall Oil (Liqro): 2c per pound in tank cars F.O.B. Charleston, South Carolina — Refined Tall Oil (Indusoil): 4½c per pound in tank cars F.O.B. Covington, Virginia.

PHYSICAL DATA	LIQRO	INDUSOIL
Specific Gravity, 60°F./60°F.	0.97-0.99	0.96-0.98
Pour point, not over, °F.	45	—
Viscosity—Saybolt Universal at 210°F.: Seconds	95-120	50-70
Flash Point, °F.	350-370	350-380
Fire Point, °F.	410-430	410-430
Color	Brown	
Lovibond using half column— Yellow—not more than.		70
Red—not more than.		40
Moisture—less than, %	0.4	0.1

CHEMICAL DATA	LIQRO	INDUSOIL
Acid Number	160-170	170-180
Saponification Number	165-175	170-185
Rosin Acids Number	80-90	63-71
Iodine Number (WIJS)	140-150	—
Ash—Less than, %	0.4	0.1
ANALYSIS		
Fatty Acids, %	45-50	55-60
Rosin Acids, % Calc. as Abietic	42-48	34-38
Sterols, Higher Alcohols, etc., %	6-9	6-10

LIQRO

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP & PAPER COMPANY

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DIAMOND ALKALI COMPANY

ALKALI

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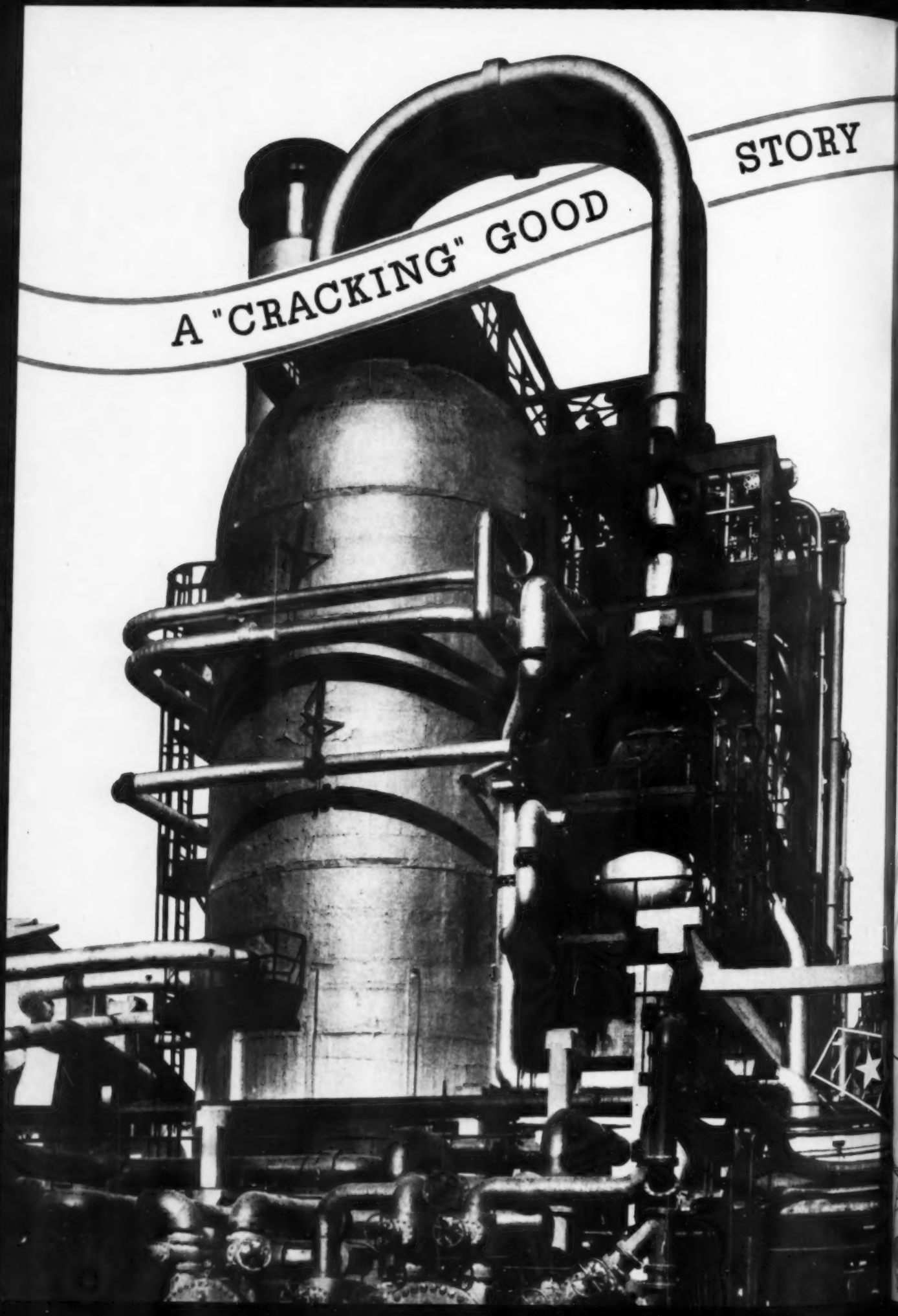
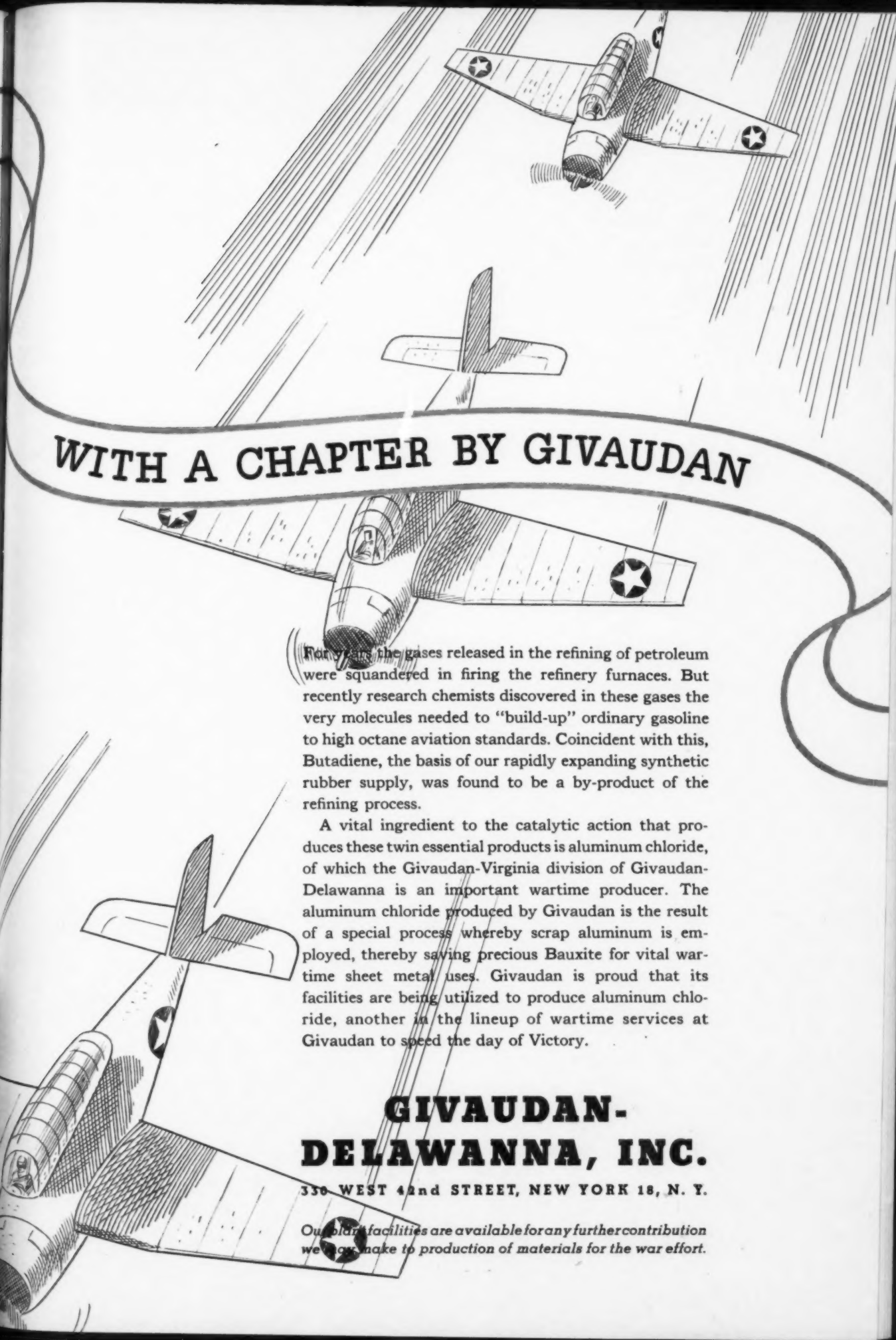

A "CRACKING" GOOD STORY



WITH A CHAPTER BY GIVAUDAN

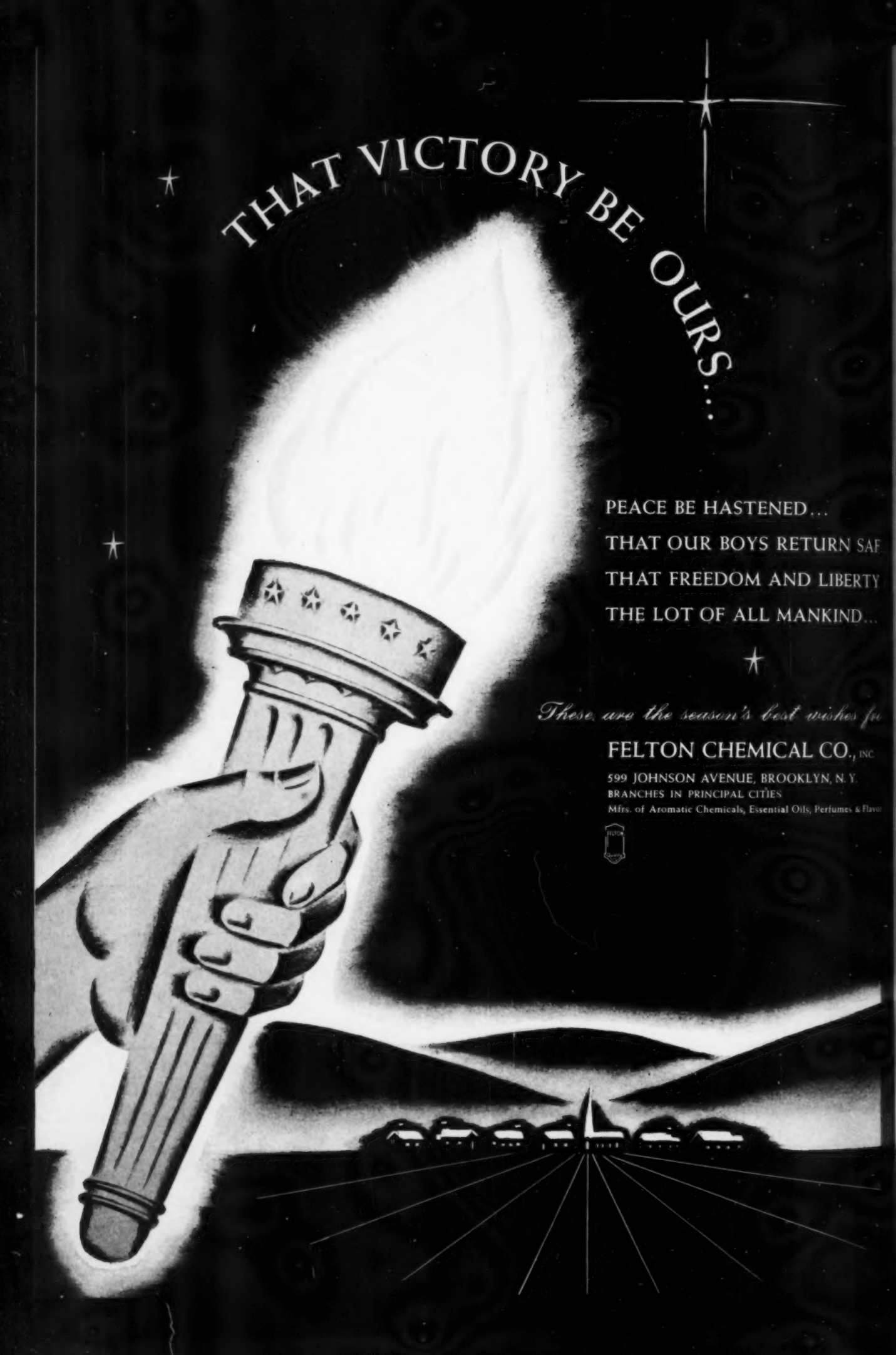
For years the gases released in the refining of petroleum were squandered in firing the refinery furnaces. But recently research chemists discovered in these gases the very molecules needed to "build-up" ordinary gasoline to high octane aviation standards. Coincident with this, Butadiene, the basis of our rapidly expanding synthetic rubber supply, was found to be a by-product of the refining process.

A vital ingredient to the catalytic action that produces these twin essential products is aluminum chloride, of which the Givaudan-Virginia division of Givaudan-Delawanna is an important wartime producer. The aluminum chloride produced by Givaudan is the result of a special process whereby scrap aluminum is employed, thereby saving precious Bauxite for vital wartime sheet metal uses. Givaudan is proud that its facilities are being utilized to produce aluminum chloride, another in the lineup of wartime services at Givaudan to speed the day of Victory.

GIVAUDAN-DELAWANNA, INC.

330 WEST 42nd STREET, NEW YORK 18, N. Y.

Our plant facilities are available for any further contribution we may make to production of materials for the war effort.


THAT VICTORY BE OURS...
PEACE BE HASTENED...
THAT OUR BOYS RETURN SAF
THAT FREEDOM AND LIBERTY
THE LOT OF ALL MANKIND...
These are the season's best wishes fo
FELTON CHEMICAL CO., INC
599 JOHNSON AVENUE, BROOKLYN, N. Y.
BRANCHES IN PRINCIPAL CITIES
Mfrs. of Aromatic Chemicals, Essential Oils, Perfumes & Flavo

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1. Economical. A thin coat dries in a few minutes to hard, lustrous finish *without polishing*.
2. For use on rubber, wood, linoleum, rubber tile, asphalt tile, mastic, terazzo and cement.
3. Does not solidify in storage.
4. Has no unpleasant odor.
5. Always delivers full value.

THE DAVIES-YOUNG SOAP COMPANY
DAYTON, OHIO

These Chemicals

Chemical	Formula	Boiling Point °C., 760mm.	Vapor Pressure mm., 20°C.	Solubility % by weight at 20°C.		Flash Point Open Cup°F.
				In Water	Water In	
Trichlorethane	$ClCH_2CHCl_2$	113.7	16.7	0.45	0.05	None
Diethyl "Cellosolve"	$C_2H_5OC_2H_4OC_2H_5$	121.4	9.4	21.0	3.4	95
n-Hexanol	$CH_3(CH_2)_4CH_2OH$	157.2	0.7	0.58	7.2	165
Methyl "Carbitol"	$CH_3OC_2H_4OC_2H_4OH$	194.2	0.2	Complete	Complete	200
Hexyl Ether	$C_6H_{13}OC_6H_{13}$	226.2	0.07	<0.01	0.12	170

are available in limited quantities

Here are five synthetic organic chemicals that were available in drum quantities at the time this magazine went to press. Have you investigated their possible uses in your processes? Some of them may help meet your present raw material needs.

Trichlorethane is colorless, non-flammable, and stable under ordinary conditions of use. It is a good solvent and extractant for most oils, fats, waxes, natural rubber, and some types of synthetic rubber.

Diethyl "Cellosolve," a stable ether, dissolves both oils and water and is an excellent mutual solvent. With alcohol, it is a solvent for nitrocellulose.

n-Hexanol is an excellent solvent for hydrocarbons, linseed oil, shellac, rosin, gums, and dyestuffs. It is also used in hydraulic brake fluids.

Methyl "Carbitol" is miscible with water and many organic solvents. It is used in perfumes, textile dye pastes, non-aqueous wood stains, and lacquers.

Hexyl Ether is a mild-odored, stable liquid, with a high boiling point. It is used as an inert reaction medium, and as an anti-foam agent particularly in certain types of adhesives.

For information concerning the use of these chemicals, address:

CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

PRODUCERS OF SYNTHETIC ORGANIC CHEMICALS

DRESINATES*

. . . PUT WATER TO WORK
save time and money

Efficient wetting agents, emulsifiers, and detergent-assistants . . . low in cost . . . Dresinates are speeding operations and reducing costs in many industries. In laundry "break" compounds, for example, a small amount of Dresinate with the alkali saves from 25 to 50% of the soap needed for subsequent sudsings; produces more efficient cleansing, too.

Dresinates—the sodium and potassium salts of modified rosins—are proving especially valuable in oil emulsions, alkaline metal cleaners, soaps, pigments, inks . . . in textile processing and pyrotechnics . . . as wetting agents, emulsifiers and detergents, foaming agents, gelling agents, and binders. Available for your operations in powdered or liquid form. For further information, mail in the coupon, today.

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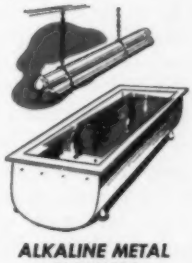
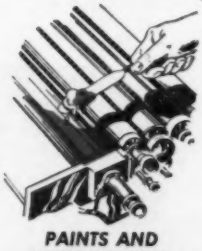


ALKALINE METAL CLEANERS

SOAPS



PAINTS AND PRINTING INKS

HERCULES
CHEMICALS FOR INDUSTRY

*Reg. U. S. Pat. Off. by Hercules Powder Company

Industrial Chemical Division
Paper Makers Chemical Department
HERCULES POWDER COMPANY
INCORPORATED
961 Market Street, Wilmington 99, Delaware
Gentlemen: I am interested in your Dresinates.
Please send me information ☐ *samples* ☐

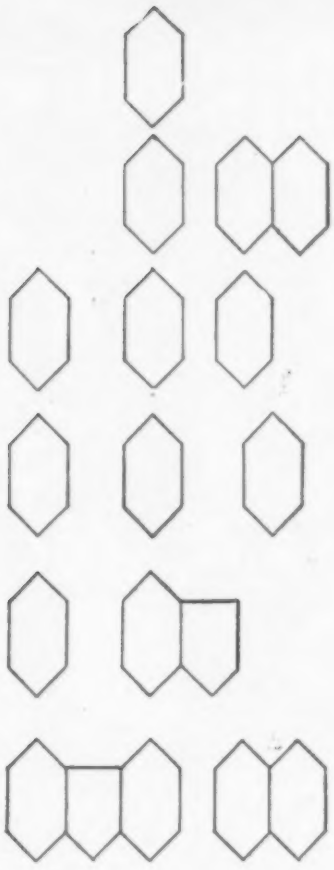
My problem is.....

Name..... *Position*.....

Firm .....

Address..... PM-88

The chemicals that were *"discovered"* at a convention



Four years ago, at the Exposition of Chemical Industries, we put up a trial balloon.

We exhibited a list of 34 chemicals from coal. Some of them were well known commercial chemicals. But others on this list had no sizable known commercial uses. Their general physical and chemical properties were known, but commercially speaking, they were "orphans."

We frankly said *that* about them four years ago; but we also pointed out that the organic chemical industry was growing by leaps and bounds, that it needed things it had never needed before, that other chemicals derived from coal had proven important raw materials for the chemical industry, and that perhaps one of the "orphans" in the Koppers' booth might be exactly the thing for which some chemist was cudgeling his brains.

Since then we have sent out literally thousands of samples of those chemicals. We have worked with many men who saw some promise in them.

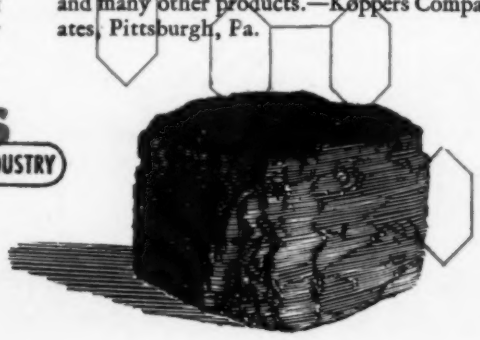
Today, several of them are in commercial production, and new plants have been built to recover them.

In early December, this year, the current Exposition of the Chemical Industries is being held. Koppers is there again to discuss possible applications of coal tar products. (There are over two hundred identified chemical compounds in coal tar and possibly many more not yet identified.) Who knows what stories may be told four years from now about coal tar chemicals which have no known use now?

Koppers is already serving the chemical industry by producing phenol, cresol, xylenol, pyridine, quinoline, and other tar bases, naphthalene, light oil products, ammonium thiocyanate, refined tars, industrial pitches, and many other products.—Koppers Company and Affiliates, Pittsburgh, Pa.

KOPPERS

THE INDUSTRY THAT SERVES ALL INDUSTRY



Canada Calling—

G. H. WOOD **& CO. LIMITED**

Industrial Sanitation: HEAD OFFICE, LABORATORY AND FACTORY, 323 KEELE ST. TORONTO, ONT.

November Nineteenth,
19 43.

Mr. Ira P. MacNair,
Soap and Sanitary Chemicals,
New York City.

Dear Mr. MacNair:

We are interested in adding one or two important lines to our "Post-War" sales and production program.

Offices and warehouses are maintained in all principal Canadian cities and our trade is serviced by fifty sales-technicians. Factories are operated at Toronto and Montreal, with a fully equipped laboratory at Toronto, assuring uniform production.

"G. H. WOOD'S" Products are sold to over 25,000 accounts, including hospitals...industries...schools...hotels... public buildings...railroads, etc.

In addition, the "G. H. WOOD'S" Package Line, comprising toiletries, moth repellents, deodorizers and papetries, is sold to practically every department, syndicate, drug and grocery store throughout Canada.

Enquiries from those interested in granting us exclusive production and sales rights in Canada for products that we could manufacture and sell, should be addressed to us at our head office - Toronto, Canada.

Yours sincerely,

G. H. WOOD & COMPANY LIMITED

G. H. Wood

General Manager.

GHWood:EJ

CANADA'S LARGEST MANUFACTURERS OF SANITARY PRODUCTS

The FACTS

about HOOKER soap and sanitary chemicals

You may find the answer to one of your problems in this partial list of HOOKER products. They are the result of research and a background of knowledge of the soap and sanitary chemical field.

In spite of war-created demands for unprecedented quantities of HOOKER chemicals, the rigid laboratory control which guards their quality is never relaxed. HOOKER quality is maintained in war as in peace.

PRODUCT Chemical Formula Molecular Weight	DESCRIPTION	SHIPPING CONTAINERS
Benzoate of Soda—USP $C_6H_5COONa=144.0$	White, odorless crystalline solid.	Fibre drums containing 25, 50, and 100 lbs.
Benzyl Alcohol $C_6H_5CH_2OH=108.1$	Clear, colorless liquid Sp. Gr. 1.050. B P 205.3° C.	1-gal. cans containing 9 lbs.; 5-gal. cans containing 44 lbs.; 55-gal. drums containing 438 lbs.
Bleaching Powder $CaO \cdot 2CaOCl_2 \cdot 3H_2O=364.1$	White powder with chlorine odor.	Drums containing 100, 300, and 800 lbs.
Caustic Soda $NaOH=40.0$	White deliquescent solid.	Drums containing 100, 220, 400, 700 lbs. and tank cars.
Chlorine, Liquid $Cl_2=70.90$	Orange liquid or greenish yellow gas.	Cylinders containing 100 and 150 lbs. Drums containing 2000 lbs. and tank cars containing 16 and 30 tons.
Monochlorbenzene $C_6H_5Cl=112.5$	Clear, colorless liquid Sp. Gr. 1.1117. B P 131.7° C.	5-gal. cans containing 45 lbs. 55-gal. drums containing 500 lbs.
Monochlortoluene $CH_3C_6H_4Cl=126.5$	Clear, colorless liquid Sp. Gr. 1.0757. B P 161.7° C.	5-gal. cans containing 44 lbs. 55-gal. drums containing 450 lbs. 110-gal. drums containing 900 lbs.
Orthodichlorbenzene $C_6H_4Cl_2=147$	Clear, colorless liquid Sp. Gr. 1.3048. B P 180° C.	5-gal. cans containing 54 lbs. 55-gal. drums containing 600 lbs.
Paradichlorbenzene $C_6H_4Cl_2=147$	White crystalline solid.	Fibre drums containing 25, 50, 100 and 200 lbs.
Sulfur Dichloride $S_2Cl_4=206$	Dark brown-reddish liquid Sp. Gr. 1.621	55-gal. drums containing 700 lbs. and tank cars.
Sulfur Monochloride $S_2Cl_2=135$	Yellow to slightly reddish liquid. Sp. Gr. 1.687. B P 138° C.	55-gal. drums containing 700 lbs. and tank cars.
Trichlorbenzene 1:2:4 $C_6H_3Cl_3=181.5$	Clear, colorless mobile liquid. Sp. Gr. 1.4650. B P 213.5° C.	1-gal. cans containing 12 lbs. 5-gal. cans containing 60 lbs. 55-gal. drums containing 650 lbs.

For additional information of the Chemicals shown, or for a complete list of HOOKER chemicals, write Dept. S-12.

FIGHT INFLATION WITH YOUR WAR BOND DOLLARS

HOOKER ELECTROCHEMICAL CO.

NIAGARA FALLS, N. Y.

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HOOKER CHEMICALS

CITRONELLA OIL ARTIFICIAL

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SPANISH ROSEMARY

SPANISH SPIKE LAVENDER

CASSIA OIL IMITATION

We are headquarters for above oils. Please write for samples.

STANDARD SYNTHETICS, INC.

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Chicago • San Francisco • Kansas City, Mo.

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Almonds
Amber
Bois de Rose
Camphor
Cananga
Cassia
Cedarleaf
Cedarwood
Citronella
Cloves
Eucalyptus
Lavender Spike
Lemongrass
Petitgrain
Pine Needles
Rose
Rosemary
Safrol
Sage Spanish
Sandalwood
Sassafras
Thyme

•

PERFUME BASES

for

Soaps
Shampoos
Liquid Soaps
Deodorant Blocks
Theatre Sprays
Floor Wax
Polishes
Disinfectants
Insecticide Sprays
Toilet Preparations

•

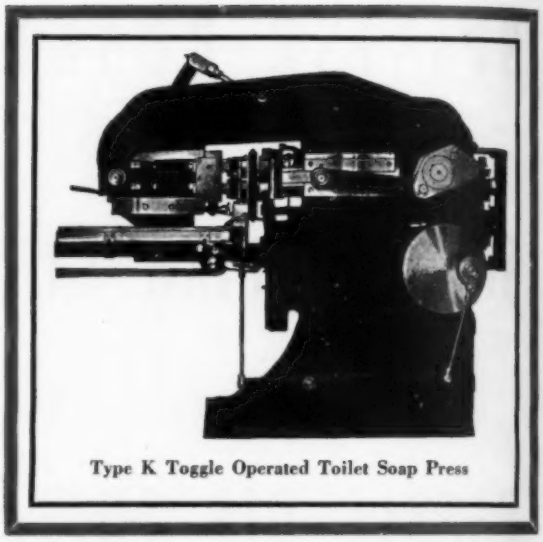
AROMATIC CHEMICALS

JONES TOGGLE PRESSES

. . . what soap formula?

ENFORCED changes in soap formulas over the past year have multiplied the problems of manufacturers. But no matter what your formulas may be today, or what problems you face in lather, color and general appearance, when it comes to soap pressing, the JONES Toggle-Motion PRESS can do it better, — can produce a cake of finished appearance and of proper consistency.

Where formula changes may induce the finished bar of soap to crack or crumble in use, the slow squeeze of the JONES Toggle-Motion PRESS will minimize this by giving the soap stock time to coalesce into a solid mass, which is not possible where the press action imparts a sudden blow.



Type K Toggle Operated Toilet Soap Press

Insofar as consistency and appearance are concerned, JONES Toggle-Motion PRESSES are aiding soap manufacturers to overcome present difficulties growing out of raw material shortages.

The Standardized CONSTANT MOTION CARTONER packages bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds, and inserts direction sheets and corrugated board liners with the loads.

R. A. JONES & COMPANY, INC.

P. O. BOX 485 CINCINNATI, OHIO

EDITOR

WHEN soaps are "stretched" by the addition of non-fat ingredients in keeping with the War Food Administration order, there arises the problem of meeting quality requirements established well over a year ago by O.P.A. If anhydrous soap content of any product on the market is reduced beyond certain narrow limits, the unit price must be reduced. On this point, the O.P.A. has made itself quite clear. Where rosin or tall oil are used to "stretch" the fat content, there appears to be no particular trouble in this respect. But, where alkaline builders or inert fillers are used to make a pound of fat go further, the soaper must give more for the money or cut his price of the finished soap. And this involves a dozen or so complications over and above just announcing a new price or putting an ounce or two more of soap into the retail package.

The attitude of O.P.A. in insisting upon price adjustments as a result of formula changes forced upon the soap industry by W.F.A. order, is in our opinion another example of O.P.A. hair splitting. While flagrant violations of both the letter and spirit of the price control regulation flourish everywhere, the law as applied to soap is as usual to be enforced with meticulous care. Although soap is just a drop in the bucket in the cost of living of the average family, one would think that it were almost as important as the cost of food, clothing and rent. When we note the many large holes in the price ceiling dike, one wonders how O.P.A. can justify spending even a minute on an item such as soap where an adjustment of price as proposed would not save fifty cents a year for the average American family. To us, it is akin to locking the small back door of the barn very carefully while the large front door stands wide open. In theory, the O.P.A. required price adjustment of soaps is undoubtedly correct and legal in all respects. But in the light of present circumstances, it is a perfect example of "straining over a gnat and swallowing a camel," — and another display of poor judgment.

AT long last, the O.P.A. has announced a plan to give housewives two meat ration points for each pound of reclaimed kitchen grease turned in at the standard price of four-cents per pound as part of the fat salvage campaign. The American Fat Salvage Committee will spend a quarter-million dollars during the first week to advertise the ration point program which will go into effect December 13. O.P.A. officials expect that the ration stamp bonus to housewives will double the rate of kitchen fat collections.

The only regret in connection with this welcome announcement is that close to a year has gone by since the idea was originally put forward. During that period, some soapers, particularly small companies, have at times been rather hard pressed to obtain enough fat of any kind to keep their kettles boiling. And possibly a hundred million pounds of grease have been wasted which might otherwise have helped to relieve the shortage at the soap kettle. But, nevertheless, the plan is soon to go into

operation and we have the highest hopes for its success to boost collection totals which have heretofore not at any time been satisfactory to the committee. And for guiding the plan through the intricacies of Washington red tape, the industry owes the committee and a few O.P.A. officials a vote of thanks.

WHILE the subject of ration points to housewives for recovered kitchen grease was being discussed of late, the thought occurred to us that collections might be still further increased if some sort of a door-bell ringing campaign could be worked out. Would there be any merit in enlisting the aid of the Girl Scouts, Campfire Girls, et al, in the fat salvage campaign?

UNLESS W.P.B. relaxes some of its orders, the manufacture of soap dispensers of all types will soon cease. And if this happens, buyers of dispensers, including the Government itself, will find that the facilities for manufacture,—and most important, the workmen who are expert in this highly specialized craft,—are no longer available. A superficial inspection may bring the initial conclusion that this would not be too serious a loss in the present job of winning the war,—that soap dispensers are a luxury item. But to those who are familiar with the problem of hand-washing in present-day war industry and who know how dermatoses of one sort or another can play havoc with production where key men become infected, they realize the need for a continuous supply of these dispensing devices. And the present supply is about exhausted.

As a means to save metals, the ban on soap dispenser manufacture is of extremely minor importance. Already manufacturers have cut metal use to a quarter or less of former figures by model changes, so that the amount of metal needed to turn out enough dispensers for the next year or two would be very small. In fact, there are some thousands of partly manufactured dispensers already on hand, but which cannot be completed for lack of various small metal parts. Ignoring the obvious interest of both soap and dispenser manufacturers, it would seem to us under present circumstances the part of good sense to permit the manufacture of a limited quantity of dispensers and replacement parts to continue to take care of the heavy demand from war plants and other industrial establishments.

IN THE general confusion attendant upon war-time production, marketing and distributing, branded products are constantly exposed to dangers which do not exist to as great a degree in normal times. By this we mean, that under the guise of war measures, those who are opposed to the basic idea of branded and advertised goods will use the opportunity to drive home their knives in the back of branded merchandise of any and all sorts. Just as the emergencies of war give the so-called social reformers the chance which they always await to put across their pet theories, they also give brand-haters the chance to "standardize" and regiment goods designed for public consumption.

That there are those in high government places who are of this persuasion, we have pointed out before. They have ample opportunity while feeding at the public trough to watch for their chance. If they make no progress under cover of war "emergency," they will keep trying and trying after the war. They are a threat which will be with us for some time, — a threat to every brand owner in the country, —and a threat of which we intend constantly to remind those who happen to read what we write here.

SURFACE-ACTIVE AGENTS

Their evaluation discussed in two part article Part I. Definitions, Surface Tension Measurements, and their application . . . Part II. Empirical test procedures, to be published later.

By Earl K. Fischer

Interchemical Corporation

SYNTHETIC surface-active agents available commercially have represented a revolutionary change in product for the soap industry. The first surface-active agent to appear, shortly after World War I, found a small market, but real growth came in the last decade. By 1940 total sales were around 100 million pounds per year. Now in World War II, surface-active agents have taken so vital a role that many are reserved for the armed forces.

Approximately 300 different surface-active agents are available, and new types continue to appear. At first glance this array of potential reagents is bewildering, for it includes a variety of organic compounds, each with a different chemical personality.

For the chemist who wishes to use surface-active agents in a chemical process or for the manufacture of a specialty product, a number of perplexing questions arises: First of all, what are the special meanings for the terms — "wetting," "dispersing," "penetrating," etc. which are used? . . . Is it possible to classify these compounds so that chemical "species" and "sub-species" can be grouped? . . . Is there any single test which gives an over-all idea for application and process control? . . . Are there simple empirical tests which will give a reliable indication of their utility? . . . Finally, is there any average or norm to which measured properties may be referred and thus be more easily carried in mind?

An answer to these questions is possible in part at least. For water systems there are time-tested theories and procedures (1), and generalizations are supported by data. It is proposed to show how fundamental physical data—chiefly the data of surface tension measurements — can be used along with specific application tests.

Terminology

Because these compounds are employed in many different industrial operations, a variety of terms has become associated with the subject. The most widely used, next to surface-active agent, is *wetting agent*—to indicate improved spreading qualities of an aqueous solution or suspension over a repellent surface. *Penetrating agent* suggests an increased degree or more rapid passage of a liquid into a porous solid. Often, in connection with powdered solids dispersed in liquids (pigment in a paint vehicle, for example) the term *dispersing agent* with the meaning of *deflocculation* is used (9). Where the process is primarily cleaning or soil-removal, *detergent* is the term applied. An *emulsifying agent* is a compound which stabilizes the dispersion of one liquid in another liquid where the two are immiscible; an oil-in-water emulsion is a common example. Finally, since most of these compounds will produce a temporarily stable mixture of air with a liquid, they may be called *foaming agents* when the process indicates.

A little thought will show that however different the processes or results, one principle connects all of these functions: there is an interface or junction of two surfaces—solid-liquid, liquid-liquid, or air-liquid. Any compound to be effective must show a disposition to concentrate at the surface formed between the two phases; in other words, it shows a surface activity. Thus the term *surface-active agent* collects the different types and functions of these specialty reagents into one convenient expression. On this basis it is possible to define a surface-active agent as a compound which in small quantity modifies the physical properties of a heterogeneous system by adsorption at an interface.

The theories for the action of surface-active compounds have led to other terms that have found their way into the patent and technical literature. Most commonly used, perhaps, is *polar* compound to designate a molecule which is capable of orientation or symmetrical arrangement at a surface in a definite direction as though under the action of a force. For complex molecules, composed of an inert or non-orienting portion in addition to a polar part, the hybrid term *polar-non-polar* is frequently used. With a somewhat different meaning is the nearly unpronounceable term *amphipathic* molecule suggested by Hartley (19). An amphipathic substance is one which has

an affinity for two different materials (oil and water, for example) or phases.

From the definitions given above it can be seen that there are two types of special terms: one refers to the process in which a surface-active agent finds use, and the other which pictures the role that the reagent takes.

Type of Molecule

All surface-active agents are characterized by a comparatively large molecule, formed usually with a water-soluble or hydrophilic group attached to a water-insoluble or hydrophobic group. The chemical personality is determined by the character of each of these components; and there are three main consequences that must be kept in mind.

First, the compounds have limited water solubility with the meaning of dissociation or dissolution into molecular units, but they have, instead, a marked colloidal solubility, with the special meaning that the compound forms separate multimolecular units or micelles within the solvent. Sucrose, for example, is of fairly large molecular size, but its surface activity is negligibly small, for in water solution the "particle" is presumably of molecular dimensions. On the other hand, the water solubility of one of the most effective types of surface active agents is less than two per cent at 25° C., and at higher concentrations a gel is formed. Soap as another example may be found listed as of higher solubility, but the "solutions" are turbid and do not conform to the thermodynamic conception of a true solution. To emphasize this distinction, McBain (14) has referred to these substances as colloidal electrolytes.

A second consequence is the low volatility of the molecule. A volatile surface active agent would have many industrial uses, but the high molecular weight of all of these compounds is associated with low vapor pressure. The molecular weight of identified commercial species is in the range of 300-450 (17). It would be advantageous in many cases to keep a reagent in solution to function during an application, but to have the substance evaporate on drying, leaving a film with superior water resistance. As an expedient, a surface active agent of an amine soap type (monoamylammonium oleate, for example) can be used; on drying the volatile amine

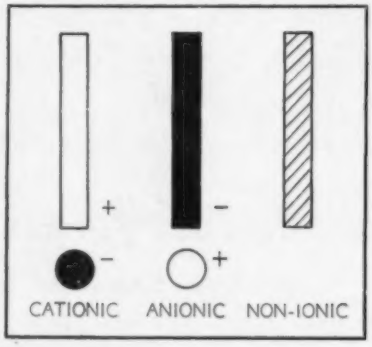


Figure 1. Diagram of the three ionic types of surface-active agents.

evaporates, leaving a fatty acid residue with no water solubility.

A third factor requiring consideration in aqueous systems is ionization of the molecule. There are three ionic types of surface active agents. If the organic part of the molecule (relatively large in comparison to the whole molecule) ionizes as a positive ion, the compound is termed *cationic*. The quaternary ammonium salts are of this type and in these the negative ion is usually the chloride ion. Numerically most abundant, however, are the *anionic* types where the organic portion is negatively charged and the positive ion is that of a metal, most frequently sodium. Another class is undissociated in solution and hence is termed *non-ionic*. An ether-alcohol is an example of a non-ionic type. (See Figure 1.)

Each of these ionic types has distinct uses. From classical colloid chemistry it will be recalled that a positively-charged ion will flocculate or precipitate negatively-charged suspended particles. This generalization holds with some validity for surface active agents. Mixing a solution of a cationic with a solution of the anionic type will produce a precipitate. Similar considerations apply to aqueous suspensions, since most dispersed particles behave like ions, usually being negatively-charged. Cellulose fibers assume a negative charge in water, and the cationic surface-active agents are strongly adsorbed to the fiber, imparting, it is claimed, superior wash-fastness to dyed fabrics (12, 15).

Chemical compounds of great variety are included in the class of surface-active agents. With few exceptions they are organic compounds, and it is perhaps inevitable that the commercial products should range from clear-cut chemical substances with known chemical and physical properties to materials or mixtures of completely unknown or undisclosed character. Many are "extended" with inert materials such as sodium sulfate or sugars, and the user should ascertain the amount of diluent.

Good lists of commercial surface-active agents with trade names and chemical composition are in the literature (3, 6, 18). In a recent review by Snell (16), the chemistry of these products and their application has been discussed. Any classification suffers, of course, from lack of precise information, but it is helpful to group the compounds commercially available as shown below.

Chemical Classes of Surface-Active Agents

1. Alcohols
2. Fatty acids
3. Ethers: ether-alcohols
4. Esters
5. Fatty alcohol sulfates
6. Sulfonates
   - Oils
   - Aliphatic compounds
   - Aromatic compounds
   - Esters
7. Nitrogen derivatives
   - Quaternary ammonium salts
   - Amines
   - Amides
8. Plant and animal extractives
9. Unidentified; proprietary mixtures

Evaluation

The large number and variety of surface-active agents have placed a burden upon the busy chemist in industry who seeks an intelligent choice of a compound for a given process. Manufacturers cannot justly publish comparisons of their materials with competing products, and an impartial

survey by an objective and disinterested user is virtually impossible because of the disparity not only in testing methods but also by the uncertainty in the data obtained from even a standardized empirical method of testing (5). The problem is further complicated by the injunction that a large measure of specific action is associated with any given use, since there are many anomalies in surface chemistry that still remain obscure if not actually mysterious. The result is that the user is required to engage in a long, costly, and sometimes exasperating series of tests in an effort to find an empirical solution.

Soap is frequently taken as the reference standard for performance. There are two ways in which a surface active agent can be better than soap: (a) stability in baths containing polyvalent metallic ions such as calcium; and (b) effectiveness at lower concentrations or greater efficiency at the same concentration.

Stability is primarily related to the chemical structure and the properties of the compounds formed on reaction. For example, the calcium salt of a fatty alcohol sulfate is soluble and may exhibit surface activity comparable to the original sodium compound. With soap, however, the deposit of insoluble reaction products actually reduces the total amount of effective material present. The soap, in other words, is used to "soften" the water.

The efficiency of a surface active agent is not so clearly related to chemical constitution, and an estimate of its performance is more difficult. Many testing procedures have been devised for the evaluation of surface-active agents; most of these are empirical and are directly related to a specialized application. Detergency, for example, has been studied by means of actual laundering tests. Wetting of fabrics is widely tested by means of the canvas disc method or the Draves-Clarkson test. These and other empirical tests, many of them requiring only simple and inexpensive apparatus, will be described in Part II.

For generally applicable data, however, it is desirable to turn to a fundamental physical measurement. That is provided by the measurement of surface and interfacial tensions of aqueous solutions.

Figure 2. Apparatus for the ring method of surface-tension measurement.

Surface Tension

Surface-active agents in solution are positively adsorbed or concentrated in the surface, and the consequent change in surface energy is conveniently measured as a change in the surface tension of the solution. The magnitude of the change is directly related to the performance of the material.

A variety of methods for the measurement of surface tension have been developed (1), and for most systems this physical measurement is capable of high precision and accuracy. Well-known methods include the following: (a) Capillary rise, in which the height to which a liquid rises in a capillary tube is measured; (b) the drop-weight method, in which the number of drops formed from a given weight of solution is determined; (c) the contour of a suspended drop, and (d) the pressure necessary to maintain a bubble of air in the solution. The most convenient and rapid method, widely used in industrial laboratories, is (e), the ring method, employing the duNouy Tensiometer illustrated in Figure 2.

This method is based on the measurement of the force necessary to pull a ring from a surface. A platinum ring, cleaned by heating to redness in a flame, is immersed in the solution, and the ring is then drawn slowly from the surface. Just before pulling clear of the liquid surface, the interface in cross-section takes the shape shown in Figure 3A. The force required to lift the ring to the point of rupture (maximum pull) is equal to the weight of the liquid raised and depends on the radius of the ring, the radius of the wire forming the ring, the density of the liquid, and the surface tension of the liquid. A correc-

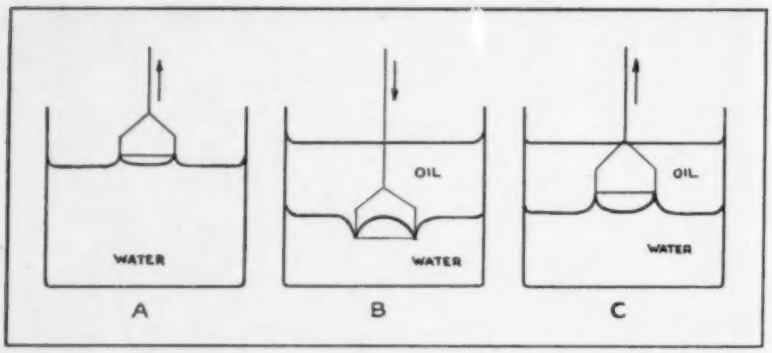


Figure 3. Diagram of interface when measuring surface tension (A) and interfacial tension (B-C) between oil and water with the ring method.

tion factor for the shape and size of the ring must be included in the calculations for accurate values (11, 13).

Although the ring method is capable of high accuracy and precision, it has been severely criticized when used in the form of the du-Nouy instrument. No provision has been made for temperature control. A change of 10° C. — a range commonly experienced for laboratory temperatures between summer and winter—results in a difference of 1.6 dynes per cm. or 2.2 per cent for pure water, and the percentage error for hydrocarbons is even larger. The instrument, however, is conveniently and easily operated, and is well adapted for control purposes where a precision of 0.5 dyne per cm. is sufficient.

The ring method is suitable also for the measurement of the interfacial tension between two liquids. In this case the force necessary to bring the ring to the point of rupture of the liquid-liquid interface is measured. The profile of the surface at this point is shown in Figures 3B and 3C.

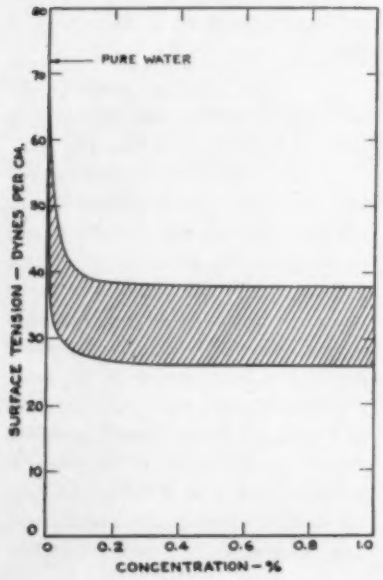
The measurement of interfacial tension with the ring method is a much more complicated matter than the analogous surface-tension measurement. The age of the interface, ordinarily of secondary concern, becomes a factor of first-order importance. Hydrolysis, for example, can occur at the interface with many materials, and a drift in the readings results.

Most of the data on surface and interfacial tensions of surface-active agent solutions have been obtained with the ring method. Interfacial tension data are usually given for the solution-mineral oil interface. A pharmaceutical grade mineral oil is used. These oils are highly refined, non-reactive, non-spreading materials, and the difficulties attending the measurement are minimized.

Curves showing the lowering of the surface tension and interfacial tension for commercial surface-active agents are given in Figures 4 and 5. One of the more important factors is the change in surface tension as a function of concentration. The majority of reagents fall within the limits shown by the shaded area. A small quantity, it should be noted, is sufficient to produce a large drop; thus a concentration of 0.2 per cent for an unknown reagent would cause a reduction from 71.97 dynes per cm. (pure water at 25° C.) to the region between 28-40 dynes per cm. Larger concentrations have only a small effect, and except as a reservoir against extraction or exhaustion of the bath, are unnecessary.

Interfacial tension data are shown in a similar plot in Figure 5. Extremely low values are reached (about 1 dyne per cm.) fo rsome compounds. As a rough generalization, an interfacial tension of less than 10 dynes per cm. indicates a useful emulsifying agent.

Figure 4. Surface-tension values for majority of surface-active agents fall within shaded area on graph.

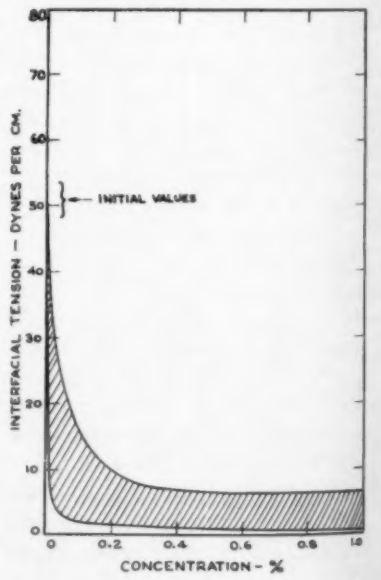


Applications

In the application of surface-active agents to laboratory or manufacturing processes it is merely necessary to add from 0.1 to 1.0 per cent of the selected material. This small addition frequently makes the difference between a smoothly operating process and one which is a source of recurrent difficulty.

An important example is the fabric-dyeing process. Some textiles are sized or contain suffiicent residual fatty material to resist the penetraiton of the dye bath, and the fabric

Figure 5. Interfacial-tension values between mineral oil and water for the majority of surface-active agents fall within shaded area.



emerges mottled and streaked—marketable only as "seconds." A surface-tension depressant, however, promotes uniform penetration and leveling of the dye.

Consider the industrial example of a typical fabric-processing operation a little further. A web of fabric is immersed in a bath containing a dye or impregnating substance; the fabric is removed and passed through squeeze or wringer rolls; it then enters a dryer. In this sequence, the rate at which the liquid of the bath penetrates the interstices of the web is directly related to the wetting time; further, some of the surface-active material is extracted along with the dye or other chemicals, and the bath is correspondingly depleted of its components at a defferential rate. There are accordingly several precautions to be observed.

The first factor is the wetting time permitted by the mechanics of the operation; it is evident that the wetting time must be considerably less than the actual immersion time. Rapid and complete wetting is invariably associated with low surface-tension, and the wetting times of the Draves-Clarkson test fall in line with this criterion. Actually the practical procedure for control consists of calibrating an empirical test—using the same fabric and bath with surface-active agents—by means of surface-tension data. It is then possible to chart the effectiveness of different surface-active agents both in terms of the process variables (which may be largely mechanical) and more general data. It is further possible to determine the limits for safe operation.

This method for control is illustrated by Figure 6 for the impregnation of cotton batting with rubber latex. When the bath had a surface tension of 37 dynes per cm., the corresponding wetting time for a swatch of the cotton was 15 seconds; the wetting time gradually increased to 45 seconds at a surface tension of 40 dynes per cm. The latter reading corresponded with insufficient penetration during the immersion cycle of 30 seconds, and the further addition of surface-active agent —in this case a fatty alcohol sulfate— was necessary.

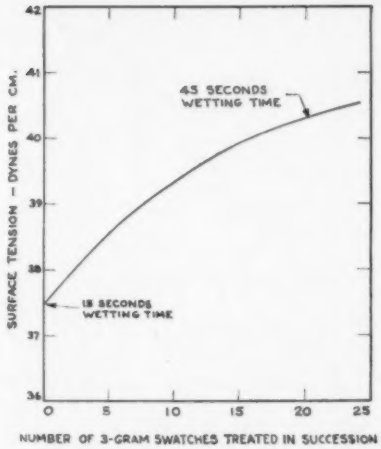


Figure 6. Bath exhaustion shown by rise in both surface-tension readings and wetting times for cotton in rubber latex bath.

A second factor is stability. In systems which are strongly acid or alkaline, the activity of any surface-tension depressant may be greatly affected. Nor are all surface-active agents proof against the salts of calcium, magnesium, or iron which are often found in the water supply in sufficient amount to render the use of ordinary soap impractical. By shaking the reagent with the bath or by successive additions of contaminating salts, followed by surface-tension measurements, any change in efficiency can be determined. Compounds which are stable and show no surface-tension increase are accordingly the most suitable.

A third factor, extraction or exhaustion of the surface-active material, is equally important. Because these substances are strongly adsorbed from solution, they are sometimes preferentially extracted at a rate greater than other bath components, and the surface-tension readings show a steady rise. By means of surface-tension measurements taken at intervals, the necessary addition of surface-active agent to replenish the bath and maintain a standard wetting time can be determined. An example of this effect is shown in Figures 6 and 7 for a latex impregnating composition (*9*).

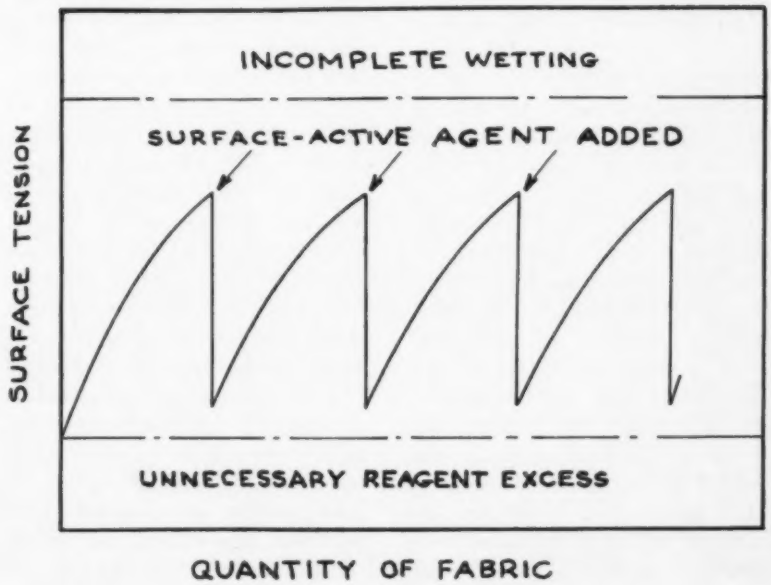
Where a composition is intended for surface application—daub coating or an insecticide spray—the problem of exhaustion is of no concern, and the minimum quantity of surface-active agent to cause complete spreading is necessary.

Summary of Part I.

Surface-active agents have become important industrially in the last decade because they offer many advantages over soap. The term, surface-

(*Turn to Page 53*)

Figure 7. Generalized curve showing control of wetting time by periodic additions of surface-active agent to the bath in a continuous process.



SOAP DISPENSERS...

Why W. P. B. should relax M-126 to avoid a complete stoppage of their manufacture... their metal content already cut to 25 per cent or less... dispensers called vital for war plant needs

SOAP dispensers have within recent months been added to the growing list of war casualties. A glimpse of the current picture reveals that a number of the limited group of manufacturers have been forced by WPB regulations to suspend operations, while others are "scraping the bottom of the barrel" and will very shortly be in the same position of having no dispensers to supply. Some firms have turned to lead and wood as replacements for the metal parts that are denied them by WPB regulations, but there are very obvious limitations to such dispensers which seriously reduce their efficiency. Plastics, which it was hoped for a time would solve the problem of the soap dispenser manufacturer, are now, like metal, on the forbidden list.

While in some cases the WPB has authorized use of plastics for dispenser manufacture, this has not been in the final analysis of any great benefit in relieving the situation as some parts absolutely require use of metal, and without the release of these small quantities of metal the WPB might apparently just as well have not released the plastic. One manufacturer of a dispenser, now largely fabricated from plastic, for instance, advises that he is unable to continue operations because of inability to get small quantities of metal for brackets. The brackets must be of steel because the dispenser is an industrial unit and must be built sturdily enough to withstand rough handling in the plant. Some four ounces of steel per dispenser are needed for brackets, plus an additional small metal agitator weighing slightly over one ounce, which could be stamped out of any available scrap metal. Inability to get release of this small quantity of metal from the metals division of WPB has completely nullified the action of another branch of WPB in giving this manufacturer release on the plastic which constitutes the principal bulk of the dispenser.

Another manufacturer has just come out with a dispenser made principally from porcelain in an attempt to solve the metal problem. It substitutes a valve of synthetic rubber for the usual metal valve, and even the wall bracket is of porcelain rather than unobtainable metal. Practicallv the only metal required for this dispenser would seem to be the screws for fixing it to the wall. It presents an attractive appearance and would seem to offer encouraging possibilities for some installations. We cannot quite see it however for industrial use, and it is this need that is the most serious one today, and the one which it is most important to have filled in the interest of the war production program.

In a series of interviews with dispenser manufacturers over recent weeks, a representative of *Soap & Sanitary Chemicals* has uncovered an interesting background on this dispenser picture. It would seem that the industry has a very strong case for more preferential treatment from WPB, but apparently the case has not yet been presented in the strongest manner, or to the proper parties. The facts are that while WPB regulations have been relaxed to allow the manufacture of such comparative non-essentials as ice cream dippers, cake turners, basting spoons, other kitchen gadgets, etc., soap dispenser manufacturers have consistently been turned down on the relatively small amounts of metal needed for dispensers which today find their principal market in war plants, public institutions, and other places where their use is essential.

The WPB order which controls soap dispenser manufacture is M-126, Iron and Steel Conservation Order. It provides that "no person shall process any iron or steel (including stainless steel) to make any item on List A, or any part thereof or repair part thereof." Soap dispensers are specifically included on List A,—their manufacture having been prohibited since Sept. 9, 1942.

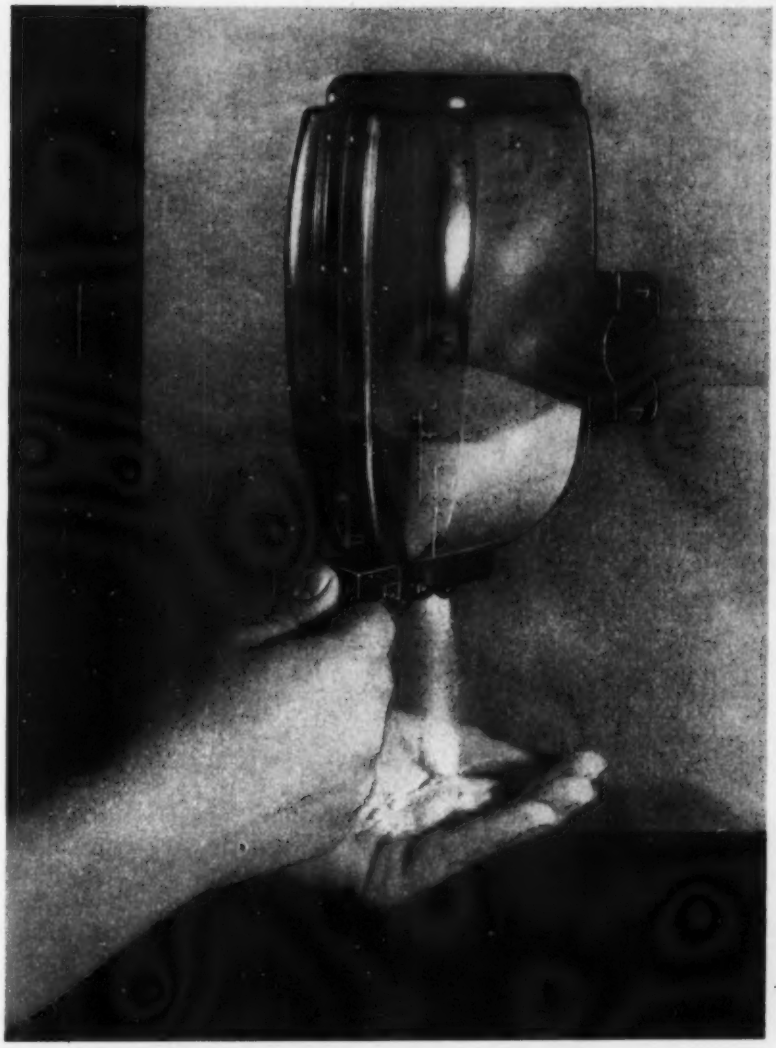
When this order was first put into effect, dispenser manufacturers had hopes of being able to work out a way to continue operations,—by reducing metal consumption to the minimum and turning to plastics as a substitute for replaceable metal parts. Their efforts in this direction proved to be fruitless, however, when it developed that use of plastics was also subsequently forbidden, and that there was no way to obtain even a small metal spring or valve, itself amounting to but a fraction of an ounce of metal, to complete an otherwise usable dispenser.

The WPB prohibition on the manufacture of metal dispenser parts has been the most crippling blow to the industry. One manufacturer, for instance, reported to a representative of *Soap & Sanitary Chemicals* that he lacks only a small metal outlet nipple, measuring only one-quarter of an inch

in its greatest dimension, to complete a group of otherwise finished dispensers. For lack of a few hundred pounds of metal he is unable to complete ten thousand otherwise finished dispensers. The metal already in the dispensers is tied up and of just as little use to the war effort as the scrap metal in this manufacture's store yard, in which he reports he is unable to get any salvage agency to show the slightest interest.

EARLIER this year Washington reports began to indicate the worst of the metal stringency might be past, and WPB began to ease up in the strictness of its regulations on metal use. WPB order L-30-d covering the manufacture of kitchen, household and other miscellaneous articles was modified on July 17 to permit the manufacture of limited quantities of these items, which would certainly not seem to carry anything resembling the essential status of soap dispensers. The new order permits the manufacture of basting spoons and cake turners (for use only by commercial or industrial establishments) on a basis of 35 per cent of base period use of metal. Manufacture of ice cream dippers is permitted on the basis of 15 per cent of base period use of metal, while manufacturers of wire whips for kitchen use are permitted to operate on the 35 per cent basis. Incidentally, we also learn that the production of fireplace grates has now been given WPB blessing. Under a WPB amendment to M-126 manufacturers of fireplace grates weighing not more than 40 pounds may now resume use of 50 per cent of the iron and steel they used in such products during 1941.

Release of comparable percentages of metal to soap dispenser manufacturers would in all probability solve their current problem very handily. One dispenser manufacturer reports that in a redesigned experimental wartime model he was able to reduce his metal content to 25 per cent or even less than that formerly needed. Metal is now required, he reports, only for valves and fittings.



War-time dispenser model reduces metal use 75%. Unavailability of a few ounces of metal still prevents its manufacture.

Queried on the possible total poundage of metal needed to fill the requirements of the entire industry, another manufacturer reports that by the release of fifty to seventy thousand pounds of iron, brass, stainless steel and zinc, the WPB could assure the production of perhaps two hundred and fifty thousand dispensers, well above a full year's normal requirements. He indicated that before the war the usual type of push-in or push-up dispenser (with glass soap storage bowl) used perhaps six ounces of metal, and that it has been possible to effect some reduction in this figure.

The firms who formerly made all-metal dispensers have of course been able to accomplish even greater economies on a percentage basis in their metal requirements. One manufacturer, for example, reports that where formerly his metal dispenser used brass and chrome plating weighing two pounds, six ounces, his new principally plastic model has reduced its needed metal content to but a fraction over five ounces.

These facts, we understand, have been pointed out to WPB officials by individual dispenser manufacturers, but, up to the moment, with negative

results. Perhaps dispenser manufacturers have suffered from lack of organization, — absence of any established group in the industry to present an industry-wide case. It seems to be common experience in Washington that complaints of individual manufacturers seldom receive too much attention, while presentation of a case by an organized group for an entire industry may often result in more prompt relief.

The net result, if some relief is not forthcoming soon, we are told, is that all dispenser manufacturers will be forced out of business. Such a situation could be quite serious, of course, not only for the handful of concerns whose businesses will be terminated, but also for the potash soap industry whose products find use in dispensers, and for war plants and public institutions which today are the principal buyers of dispensers. But priorities have little force if manufacture ceases and supplies just do not exist. The government itself might well feel the effect, too, of the disappearance of dispenser manufacturing facilities. Soap dispenser manufacturers obviously cannot keep their plants operating, their staffs together just to handle periodic government orders—with their exemption from metal use restrictions. A very considerable back-log demand from civilian industry must be kept alive if the plants are to continue operating, and be in position to handle the spasmodic but important government orders which develop.

The consequences to war production of a complete stoppage in the supply of soap dispensers have probably not been considered as carefully as they should be. Without exception, medical authorities agree that cleanliness of workers' hands is one of the most important factors in preventing dermatitis epidemics in factories. By experience, bar and cake soaps are banned. By providing the equipment and materials essential for a "clean hands" program, management has not only cut down the incidence of dermatitis outbreaks, but has also made an important contribution to the problem of keeping employee morale at a high level. In fact, workers demand clean, dispensed soaps,—and employers have long since recognized this demand as being in their own interest as well as that of the workers.

IN the absence of replacements for existing dispenser installations that have outlived their former usefulness as a result of breakage or wear, there are several alternatives for management, all of which involve a waste of soap which the government is in the same breath urging its citizens so strongly to conserve. Defective dispensers can be continued in use,—with inevitable waste of liquid or powdered soaps through improper functioning of the equipment,—or resort may be had to use of hand soaps, which are admittedly outmoded and impractical for industrial plant use, and result in a sharply higher soap consumption figure, mostly waste.

The total of all soap dispensers in use today in industrial plants throughout the country,—directly as a result of the manufacture of war goods and wide industrial activity,—is probably greater than it has ever been in history. They have not been installed because employers have been anxious to spend their money, but because they have been shown to the satisfaction of government and industrial medical experts that their use aids in preventing dermatoses and the resulting loss of thousands of man hours. No matter how strong and durable the dispenser, a considerable percentage break down under the rough handling which they receive in industrial establishments. Their replacement alone presents a considerable demand which if not satisfied may mean a progressive and accelerated reduction in the supply of installed and functioning dispensers. Each step in this decline puts a heavier load on remaining installations, and increases the likelihood of breakage.

The problem, as we see it, is for the soap dispenser manufacturing industry to find the proper approach to the right authorities in WPB. If their case is presented in its true light, it is difficult for us to believe that they would be denied some kind of relief. What is apparently needed to start with is some sort of relaxation of the present order to allow for use of limited quantities of metal to provide small "parts" for otherwise completed new dispensers or for the repair of existing installations which stand useless for this reason. This would, the trade indicates, bring quick relief with only a small diversion of metal from war uses.

One dispenser manufacturer advises that he made an approach to the problem through the medium of the Smaller War Plants Corporation, and got nothing for his pains except the opportunity of "talking himself blue in the face." It strikes us that the correct approach might well be direct to the metals division of WPB, prefaced by an approach to the soap division of WFA through the medium of the potash soap section of the Soap Association. Certainly soap dispenser manufacturers would seem to stand a much better chance of securing some measure of relief if they act as a unified group instead of individual manufacturers making unsupported attempts to get specific relief for their own particular plants.

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Dermatitis Preventative

With the purpose of reducing the incidence of dermatitis caused by mercury fulminate in the explosives industry, a liquid soap has been produced by the U. S. Public Health Service to detect traces of the mercury compound on the skin. The soap acts as an indicator by changing color in the presence of the mercury compound. The liquid soap preparation contains 0.18 gram of diphenyl thiocarbazone, 250 cc. of triethanolamine, 0.015 gram of hydroquinone, and 750 cc. of liquid soap.

The soap is orange in color but in the presence of traces of mercury salts it changes rapidly to a deep purple. The purpose of the triethanolamine is to bring the mercury fulminate into solution—that of the diphenyl thiocarbazone is to produce the color change. One drop of the reagent solution will detect the presence of as little as 0.002 mg. of mercury ion per cc. *Public Health Reports* 58, 1183 (1943); through *The Chem. Age* 49, 386 (1943).

THE WAY IT LOOKS IN Washington

by

C. H. JENKINS

THERE were fewer new developments in the soap picture this month than for some time. Washington really outdid itself during the previous month, with the revisions in FDO-42, the appearance of the new fat-stretching order (FDO-86), and OPA's revision of its Commodity Practices Regulation No. 1. With these major channelings of the industry now under the head of accomplished fact, there were but few important new developments this month, and the principal news seems to be in the interpretations which have started to come through on last month's orders. Under the amended version of FDO-42, new and higher soap manufacturing quotas were set up—90 per cent for package and bar soaps, 110 per cent for industrial soaps, and 150 per cent for mechanics' soaps. It is indicated that numerous questions have been put to WFA as to permissibility of shifting quotas back and forth, a manufacturer of abrasive soaps, for instance, using part of his quota for making other classes of soap. All such questions have been answered in the negative by the WFA. Manufacturers are, of course, allowed to switch various types of oils and fats for one another, but they definitely may not switch use of fats from one class of soap to another. As an additional check on such procedure, FDO-86 specifically limits each manufacturer's production to soaps of the particular type and quality produced or sold by him in the thirty-day period ending July 17, 1942.

In further clarification of the 150 per cent quota on abrasive or mechanics' soaps, it is pointed out that this increased quota applies only on abrasive hand soaps containing not less than 10 per cent anhydrous soap. Manufacturers of products containing less than this amount of anhydrous soap may, however, apply directly to the FDA for individual permission to manufacture at the higher 150 per cent rate.

The effect of soap formula changes on package size and pricing is governed by a new amendment to OPA's Commodity Practices Regulation No. 1, (see pgs. 73-74) issued too late for inclusion in our November issue. In brief, this amendment allows minimum prices for soap bars or packages to remain unchanged, even though formulas have been changed, provided the weight of the total anhydrous soap content of the product is not reduced more than 1 per cent for bars, or more than 3 per cent for packaged soaps. If the reduction in anhydrous content of the bar soap exceeds 1 per cent, the cut weight of the bar must be increased so it will come within the 1 per cent tolerance. On packaged soap, if the reduction is more than 3 per cent, the packed weight must be increased or a proportionate price reduction effected to bring the package within the allowed tolerance. Every manufacturer who changes the formula of his product, or who adjusts the weight of his package, must report the facts to the Chemicals and Drugs Price Branch on OPA form 692-541.

It is reported that numerous questions have been raised as to the interpretation of the inventory restrictions contained in FDO-86. Application of these restrictions to purchases by institutions has been the subject of the following official ruling by the Soap Section of FDA:

"Non-profit organizations such as Federal, State, County, Municipal, charitable, religious, medical and educational institutions are not required to make inventory certifications under paragraph (e), since these are not considered as being engaged in 'business operations'. Medical, educational and other institutions operated for profit must certify."

Other FDA rulings on inventory compliance regulations under FDO-86 have been released as follows:

An inventory compliance certificate need not be taken on each delivery of soap subject to the restrictions of subsection (e) of FDO-86. If delivery is specified on several different dates, the purchaser can certify once covering the entire order if he is sure that delivery on the dates specified will not result in his having over a 45-day inventory.

The inventory restrictions under subsection (e) of FDO-86 apply:

(a) to soap in the aggregate, and not to soap by kinds or brands;
(b) to soap for processing textiles;
(c) to soap for non-detergent purposes;
(d) to bar toilet soap when sold in case lots for business use other than resale.

"Unit package" under subsections (a) (13) and (14) of FDO-86 means the

smallest production unit. For example, a unit package would be a single bar of soap or a single carton of packaged soap. Such bars or packages are ordinarily packed in a shipping container which holds several "unit packages". A shipping container containing more than 1 package or bar cannot be considered a "unit package".

ONE important development which came early this month was the decision by the House Ways and Means Committee to abandon its attempt to force through a ten per cent tax on toilet soap, as a part of the new national revenue bill. Following the report last month that such a tax was under consideration, soap makers very promptly expressed their strong opposition to the proposal—all the usual objections being strengthened in the present situation by the threat that imposition of a new tax might lead to a new wave of excessive buying and hoarding by soap users, accentuating the soap shortage which the WFA has worked so hard to avert. The arguments of the industry were apparently effective as the House eliminated the soap tax from its new bill.

Also eliminated from the new tax measure in its final form was the original proposal to levy a 10 per cent tax on dentifrices and mouth washes. However, the tax rate on cosmetics and toilet preparations was boosted from 10 per cent to 25 per cent. The committee estimated that this advance in rate will produce additional revenue of approximately $51,000,000.

THERE were a number of new developments in the oil and fat picture this month which tend further to ease the soap maker's raw material supply problem. Inventory restrictions on tallow and grease were relaxed somewhat on November 20 in view of reported increases in production. Soap makers may now maintain a 60 days' supply instead of the 45-day limit formerly in effect.

Red oil, which has formerly ben unavailable to soap makers, may now be obtained on application to the FDA. Approximately one million pounds of saponified red oil will be available for distribution to soap makers in December. The FDA announced availability of this quantity on November 20, giving applicants only until November 29 to file applications for delivery. Saponified red oil is reported to be in rather better supply than the distilled product, and in many instances is being allocated for uses for which the distilled product is denied. Allocations of red oil for disinfectants have been denied, although insecticide manufacturers have been allowed 100 per cent of their December requirements of distilled oil.

Quotas of fish oil for soap use were increased by the FDA in an announcement November 1. In water soluble soaps the soap maker may now use, in the twelve-month period which began October 1, up to 60 per cent of the fish oils consumed in the year 1942, except that no Alaska herring or seal oils are available for such use. For use in metallic soaps no quota limits apply. The former quota limit was 40 per cent of average 1940-1941 use.

Regulations prohibiting the use of four edible oils: cottonseed, peanut, soybean and corn, in a number of industrial products, including soap, have been transferred by the War Food Administration from Food Distribution Order No. 42 to the edible oils allocation order, Food Distribution Order 29, to simplify administrative procedure. FDO-42 is the general order covering fats and oils. Effective Nov. 30, FDO-29 will prohibit—unless specifically authorized on Form FDA-478 by the Director of Food Distribution—the use of the four oils for a variety of products including soap, but excepting USP XII soap for medical use;

Soapers To Get More Fat

THE War Food Administration plans to make substantially larger quantities of fats and oils available for soap manufacture over the coming year. On the basis of present plans, as contained in a release issued November 8, a total of 2,168,000,000 lbs. of fats and oils are to be made available for soap manufacture during the year which began October 1, 1943. This approaches the record consumption of fats and oils by the soap industry during 1941 when 2,144,000,000 lbs. of primary fats and oils, plus additional untotaled quantities of secondary fats were used. It far exceeds the 1942 consumption of 1,871,000,000 lbs. of primary fats and oils.

Of this total of fats and oils which it is estimated soap makers will have access to over the coming year, 490,000,000 lbs. is for so-called "quota-exempt" soaps. This is made up of 300,000,000 lbs. of fats and oils for use in the manufacture of soaps for the U. S. military and for export needs, and 190,000,000 lbs. of fats and oils for use in making soaps for non-detergent industrial uses, including synthetic rubber and textile processing. Thus, quota-exempt fats are expected to amount to approximately 22.6 per cent of the total. In the light of these figures it will be a simple matter for each soap maker to determine for himself whether he is making his proportionate share of government and other quota-exempt soap.

It is estimated on the basis of present allocations, that the following kinds and quantities of fats and oils will be made into soap during the next 12 months:

	Million Pounds
Domestic tallow and grease	1,280
Imported tallow	71
High lauric acid oils	180
Fish oil	30
Palm oil	16
Domestic vegetable oil foots	175
Secondary fats	80
Lard, edible tallow, soybean, linseed, etc. (principally lard—to this will be added 28 million pounds additional allowed for the fourth quarter of 1943)	308
Total	2,140

Total fat and oil requirements of the United States for all purposes for the coming year (beginning Oct. 1) are estimated by the WFA at 11,700,000,000 lbs., a figure more than one and one-half billion pounds in excess of normal peacetime require-

and soft soap, hospital grade, according to U. S. Army specifications No. 4-1027A for delivery to the Army. Cottonseed, peanut and corn oils heretofore have been prohibited under FDO-42 in all but two industrial uses; use of soybean oil was permitted in industrial products generally for several weeks beginning July 10.

SODIUM metasilicate has been put under allocation by the War Production Board because of heavily increased demands due to restrictions on the supply of other detergents. On and after Dec. 1, states order M-355, no primary supplier shall deliver sodium metasilicate except as authorized by the WPB. This applies to the chemical in both its hydrous and anhydrous forms. Individual authorization is required for deliveries to customers ordering more than 8,000 pounds during any month. The number of pounds is to be calculated on an anhydrous basis. Deliveries of between 800 and 8,000 pounds per month will be authorized on statements of end-use in the customers' applications. A lump sum will be allocated to each end-use without specifying the names of individual customers and the supplier will deliver on a pro rata basis. Orders of 800 pounds or less will be filled without reference to end-uses from a lump sum allocated for small orders. Each customer receiving more than 8,000 pounds must file with the War Production Board a report showing his use of sodium metasilicate by quarters for the two-year period ending Sept. 30, 1943, but he is not required to file such a report periodically. This report shall be filed on or before the 15th of the month preceding the first month in which he expects to receive more than 8,000 pounds of the chemical from all suppliers.

Borax inventories have recently been restricted. Effective November 1 and until further notice inventories of borax (hydrated and dehydrated) and of boric acid must be limited to a practical working minimum.

ANOTHER development this month is a survey reported to have been undertaken by Census workers as to the availability to the average civilian of 115 types of goods and services, including laundry soap, as well as laundry and dry cleaning services. The survey is being made for WPB's Office of Civilian Requirements, and will reflect the national picture as to what products in short supply are most needed, and to what extent shortages may be causing hardship.

A recent new restriction on soap makers is the provision in WPB Order L-232, amended October 25, to the effect that new wooden shipping containers may not be used to ship soap, polishes or waxes that are packed in glass, textile, metal or paper, nor may such containers be used to ship cosmetics, dentifrices, shampoos, toiletries, detergents, or scouring and cleaning compounds, regardless of how they are packed. These restrictions do not apply to boxes consisting of more thas 50 per cent of corrugated or solid fibre (by area), nor to shipments in wooden barrels, kits, kegs, drums or pails.

A change in the arrangements for importation of fats and oils was announced on November 11 by the Department of Agriculture. Heretofore the government has handled all importation of such materials through the Commodity Credit Corp. In the future a number of such fats and oils will be purchased and imported by private hands, under FDA regulation. The materials affected include tucum and muru-muru kernels and oils, Argentine and Canadian glycerine, oleic

(*Turn to Page 74*)

Fats and Oils During 1944

ments. The United States is expected to produce more than 90 per cent of this total, compared with its normal peacetime production of only 82 per cent of the smaller peacetime requirements. According to WFA estimates, domestic production of fats and oils is expected to reach a total of 11,300,000,000 lbs. during the coming year. Imports, which are expected to reach 1,100,000,000 lbs., would supply the balance of the estimated requirements of 11,700,000,000 lbs., and would help also to replenish our stock position.

Domestic production of 11.3 billion pounds of fats and oils during the year beginning October 1, will consist principally of the following:

	Billion Pounds
Butter	2.1
Lard	3.1
Soybean oil	1.4
Cottonseed oil	1.3
Corn oil	.2
Linseed oil	.9
Peanut oil	.2
Inedible tallow and grease	1.6
Miscellaneous	.5
Total	11.3

FACTORY CONSUMPTION OF PRIMARY FATS AND OILS IN SOAP

Based on U. S. Census Figures, and on Estimates for 12 Months Beginning October 1, 1943, Released November 8, 1943, by U. S. Dept. of Agriculture

Primary Fats and Oils in Millions of Pounds Annually

	Calendar Year 1939 (U. S. Census)	*Calendar Year 1940 (U. S. Census)*	*Calendar Year 1941 (U. S. Census)*	*Calendar Year 1942 (U. S. Census)*	*Estimates for Yr. Beginning Oct. 1, 1943 (Dept. of Agr.)*
Tallow and grease	906	1,043	1,368	1,528	1,351
High lauric acid oils	430	437	515	161	180
Palm oil	102	85	130	56	16
Fish oil	115	89	69	50	30
All other primary oils	101	69	62	76	336
Total	1,654	1,723	2,144	1,871	1,913

(*Note*: Domestic Vegetable Oil Foots and Secondary Fats do not appear in these tables)

the trend in
. . . HOLIDAY GIFT SOAPS

SOAP as a gift is finding greater acceptance for Christmas 1943 than at any time heretofore. At least, that's the impression you come away with after talking with people in the merchandising field and judging by the number and variety of different types of soap gift packages to be seen in advertising, on store counters and displays and in store windows. In attempting to assign causes for the growth and popularity of soap as a gift, the war's effect looms large and inescapable. Whether the war acted causally or as a catalytic agent speeding up a reaction is not quite clear. However, for some time an evolutionary process has been going on in this field. At one time soap as a gift simply wasn't thought of. In the majority of minds an unpleasant implication lurked when it came to giving soap as a gift. Two factors may have had a bearing on this condition. It may have been that few American soap manufacturers bothered to manufacture other than an everyday soap, and secondly, that being the case, only a limited number of firms bothered to package soap in other than an everyday fashion. Two such drawbacks would have been fatal no matter what the product.

Importations, mainly French, German and some English, usually in novelty form, with emphasis on novel packaging created an opening wedge in whose wake were to follow the beautifully packaged, suave or novel soaps we have begun to know in the past few years, and will probably continue to know in greater volume and variety in the years to come. From the manufacturing standpoint, the war, cutting off imports and leading to the consequent replacement of imported soaps by American manufactured and designed products, has been an important factor. From the marketing standpoint, soap shortages, and the consequent soap ration whispering, have made the American public suddenly become more conscious of soap and its value. This is particularly true in the case of the finer soaps as is evidenced by a greatly heightened demand for them as gifts.

Gift soaps generally come in one of three different types of packages. They are sold alone, usually three hand size cakes, two or three bath size cakes depending on the size, and six or eight to a dozen small or guest size cakes to a box; in the majority of cases twelve guest cakes to a package is the rule. Novel shaped soaps—those in the form of hearts, ice cream cones, golf balls, telephones, automobiles, flowers, hats, animals and what-not-form the second category. Finally, soap in combination with toilet water, and/or cologne, talc or bath salts is another type of gift soap package. The combination package—usually lavishly decorated and fitted out, is predominant this year, probably because of current shortages in every conceivable type of supply. Combination packages have been spawned for the most part by the toiletries and cosmetic houses and are intended primarily for women. However, soaps for men are also making a more aggressive appeal to the gift market this year. Although gift packages of shaving creams, after-shave lotion and after-shave talc are not new, combining a cake of what manufacturer describes as "a soap for men" does seem to be definitely a 1943 innovation. Such a package is that put out by the J. B. Williams Co. Their package to retail for $1.29 includes a Currier and Ives shaving bowl, a cake of lanolin soap, a container of after-shaving talc and a package containing five razor blades. As men's shaving sets go, this one is unique in two respects: 1.) the cake of soap, and 2.) the razor blades. It seems probable that the two departures are war "babies." With the shortage in the available supply of alcohol for "cosmetic" preparations, the Williams company was forced to substitute something for the after-shave lotion. A single cake of soap would not compensate sufficiently for the absence of the after-shave lotion and thus the package of razor blades.

While in the early days of the promotion of soap as a gift, great stress was necessarily laid on the appeal of the novel, this holds true today only to a lesser extent. The reason is that American women in their taste for soap as in cosmetics have become quality conscious. However, novelty is a big factor in soap sales appeal and one that is constantly exploited by the more aggressive and progressive soap manufacturers. The channel through which this method of appeal is being directed has been varied somewhat recently and appears to find its best market among the younger element.

Packaging for more orthodox and utilitarian designed soap for older people has borrowed a great deal of the novelty formerly put into the soap itself and, in fact, has had added to that novelty a few touches of its own. Illustrative of this technique is the Shulton Early American, Old Spice tissue box. Mem's natural finish wood box soap packaging also exemplifies the novel idea in packaging. Novelty is accomplished by the House of Gourielli in soap form with some of their shield shapes. However, the outline of the soap so closely approximates the design or shape of the average cake of soap—oval, square or rectangular—that while novel, utility, i.e., ease in handling, is not overlooked. It can be said almost categorically that the average high

quality soap on the market today retailing in the $1 a cake neighborhood is oval in shape and bears either an impressed or *bas relief* decoration.

One of the leading exponents in the novelty soap design group is Trejur. They have everything from ducks to automobiles in soap with appropriate packaging. For example, one of their newest items is a package containing a clown, horse jumping through a hoop and a seal balancing a ball on his nose, all made of soap. The inside of the package carries the likeness in color of the inside of a circus tent, complete with ring master, aerialists on flying trapezes, spot lights, et al. The soap and package with colorful circus scene background and a bit of verse about the circus retails for 59 cents. Among other similar novelties to be seen for children are a telephone in soap and six ice cream cones—flavors: vanilla, strawberry and chocolate—with a regular tray-like device for carrying them, to retail for $1. The soap "ice cream cones" were from Kerk Guild, Inc., New York.

Lord & Taylor, New York department store, have some neat soap novelties of their own design. One particularly realistic package was a box of soap "mints." The "mints" were colored in pink, green and white—reasonable facsimilies of the real thing—and had a minty scent to them. They were small, in the guest hand soap size, and came 18 in a mint-like candy carton to retail for $1.25. In a larger size—six bath cakes—the "mints" retailed for $1.25.

NATURALLY, the war has cut sharply into the number of new offerings customarily brought out particularly for the holiday buying season. In spite of the war, however, Lightfoot Schultz came through with their new "One Dozen Roses" gift soap package. The cover of the corsage-like box is printed with a long stemmed American beauty rose and the words: "One Dozen Roses." The soap itself is in the shape of small, hand size guest hearts. Twelve cakes retail for $1. The $1 to $1.50 price range is about the average for guest size hand soap in gift packages. The regular hand and bath sizes, depending on number run from $1 to $3.25. Roger and Gallet have a number of soap gift offerings in both combination and straight soap items. One particularly large and impressive combination, complete with padded satin lining, bath powder, sachets, two large cakes of soap is featured in department stores to retail for $10, one of the most expensive packages being marketed. It is sold in either the "Fleur D'Amour" or "Blue Carnation" scents. There are similar Roger & Gallet gift boxes ranging from $5 down to a $1.15 package of three cakes of "Blue Carnation" toilet soap. Other packages: eau de cologne, talcum, sachet and toilet soap in gift boxes retail at $3.45, and $2.85 for a five piece "Night of Delight" set consisting of three cakes of toilet soap, eau de cologne and talcum. At $5 there is a six piece "Blue Carnation" set made up of eau de cologne with atomizer, dusting powder, talcum, sachet, and large cake of toilet soap.

Looking around the stores one sees soap gift packages bearing most of the prominent names of the cosmetic and toiletries industry, in addition to the leading names of makes of the more expensive, gift types of soap. To mention a few there are: Charles of the Ritz, Harriet Hubbard Ayer, Chanel, Mary Chess, Charbert, Du Barry, Dorothy Gray, Hudnut, Abano, Bourjois, Herb Farm Shop, Shulton, Yardley, Helena Rubinstein, Gourielli, etc. All this augurs well for future soap gift packages since these people have put a great deal of time, effort and money into the promotion of their names and products. With such famous names behind them, soap gift packages now and in the future should sell in greatly increasing volume. Providing, of course, the products are up to the same high quality as those which made the names famous.

Yardley, always a well-known name in the beauty preparation and soap field, has developed quite an unusual package this year. In addition to three cakes of hand soap, the package contains a box of "Lavendomeal" bath preparation and a container of English talc. This package retails for $3.25. Yardley has another that retails for $2.35 and consists of three cakes of hand soap, a bottle of hand lotion and a box of talcum.

If soap gift sales are to approximate those of straight cosmetic gift packages, then merchandising methods will have to be altered, in some case, to a considerable extent. Cosmetics have a department of their own in most department stores. But the same cannot be said for soap in the great majority of cases. Usually, soap is sold alongside cosmetics in the cosmetic or toilet goods department. And while this may seem to be logical, particularly this year in view of the fact that so many, if not all of the cosmetic and toilet goods houses have come out with gift cosmetic packages containing soap, something remains to be said for merchandising soap in a separate department or section. It is almost a merchandising axiom that if you want to sell a product or a line of kindred items, it is advisable to sectionalize them. The case of closet accessories, once confined to a few garment bags in the notion department, is illustrative of the point. So, too, with soap.

Now that soap is being sold in a variety of different types of packages, in various forms, and for both men and women, it does seem logical to combine all this type of merchandise in one section, counter or what-have-you. The stores that have done it—and there are a few—have been highly successful. Psychologically there are many reasons against the present divided set-up. As a cosmetic, soap plays a secondary role. In some cosmetic departments soap is pushed back toward the rear of the departments, half-hidden, not properly displayed and generally neglected. And it looks neglected where this is done. As a result, the customer is not attracted by the merchandise and likewise not stimulated to buy it. On the other hand, if properly displayed at a counter or section of its own, the product achieves a certain importance both in the eyes of the people who sell it and the customer who buys it. It is not pushed to one corner, nor hidden in with a lot of other similar or dissimilar merchandise.

TURNER
CHEMICALS

CAUSTIC SODA
PERSULPHATE OF POTASH
PERSULPHATE OF AMMONIA

JOSEPH TURNER & COMPANY

RIDGEFIELD, NEW JERSEY

83 Exchange Place, Providence

40th St. and Calumet Ave., Chicago 15

NEWS

Morris Leaves Lever Bros.

G. Douglas Morris, formerly assistant to Homer M. Clark, in charge of *Lifebuoy* promotion for Lever Brothers, Cambridge, Mass., has resigned to join Campbell Soup Co., Camden, N. J.

Induct Shulton Rep.

Jack B. Mathews, salesman for Shulton, Inc., soaps and cosmetics, New York, was inducted into the U. S. Army, recently. He covered Maryland, Washington, D. C., and Delaware, Virginia and Pennsylvania for Shulton.

C-P-P Head Addresses News Reps.

Edward H. Little, president of Colgate-Palmolive-Peet Co., Jersey City, N. J., was the guest speaker at the monthly meeting of the Newspaper Representatives Association at the Hotel Lexington, New York, Nov. 15.

P&G Attendance Records

Investigating the subject of "absenteeism," the editor of Procter & Gamble Co.'s house organ, *Moonbeams*, has dug up some remarkable records of perfect attendance at the company's various plants. At Kansas City Bert Bohanon, yard clerk, has been on the job every day for twenty-two years, a feature article in the publication's October issue states. At the Chicago factory Anna F. Gallus, has not lost a day in twenty years and another Chicago employee, James W. Bauer, has a 19-year record of perfect attendance. At the Hamilton plant Jack Wells, mechanical dept., has not lost a day in fourteen years, and another 14-year man is Clifford Robinson, fireman and boiler house mechanic at the St. Louis factory. Records of thirteen years without a lost day are claimed for Arthur Scherer, gateman at the Baltimore factory, Chas. Metzler, night cleanup man at Baltimore, and Georgina England, packing granules dept. at Port Ivory.

C. A. Willard Leaves WPB

C. A. Willard, deputy chief of the Drugs and Cosmetics Section of the Chemicals Division of the War Production Board, resigned Dec. 1, to become comptroller of Elizabeth Arden, cosmetic manufacturers, New York. Mr. Willard joined the Health Supplies Branch of the Office of Production Management, Dec. 12, 1941, and when that branch was divided he became chief of the Toiletries and Cosmetics Branch. He became deputy chief of the Drugs and Cosmetics Section at the time WPB reorganized and the drugs and cosmetics branches were consolidated into a single section. Mr. Willard's work at WPB will be carried on by E. B. Tysal, who has been chief of the cosmetics unit for the past year.

Quigley Co. Moves

Quigley Co., manufacturers of such industrial specialties as detergents, fire brick, protective coatings, etc., have just moved their general offices to new and larger quarters at 527 Fifth Ave., New York 17.

Hardesty Honored at Luncheon

As part of the effort to secure the election of W. C. Hardesty as president of the Smaller War Plants Corp., a luncheon was given by the Independent Citizens League at the New York Athletic Club, Nov. 15. Mr. Hardesty is head of the oil and fatty acid firm bearing his name, and is a prominent candidate for the post.

T. G. A. Convenes May 18-19

The annual convention of the Toilet Goods Association will be held May 18, 19 at the Waldorf-Astoria Hotel, New York. L. R. Root, of Scovill Manufacturing Co., is chairman of the convention committee.

Walter McKee Joins Pepsodent

Walter McKee, previously sales manager of the toilet goods department of Colgate-Palmolive-Peet Co., Jersey City, N. J., has joined Pepsodent Co., Chicago, as a vice-president.

P & G Man Joins Balfour Guthrie

Thomas R. Chrysler, formerly associated with the purchasing department of Procter & Gamble Manufacturing Co., Los Angeles, has joined Balfour, Guthrie & Co., New York, to serve in the oils, fats and seeds department.

To Purchase Rainier Soap Co.

Schilling Sales Co., New York City, is reported to be negotiating for the purchase of Rainier National Soap Co., Rainier, Ore. The Schilling firm has not previously been active in the soap field, but has sold another line of products through department stores, and has an extensive group of sales representatives calling on this trade. It is understood that they will continue to manufacture Rainier soap, which has been made by this West Coast firm since 1904.

Joe Huisking a Grandfather

Joseph Huisking, Fritzsche Bros., Inc., essential oil house, New York, recently became a grandfather with the birth of a son, Nov. 17, to his daughter Dorothy (Mrs. Vincent Rebak) and Capt. Vincent Rebak of the U. S. Army Air Corps.

Norda

Synthetic floral oils . . .

PRESENT reduced supplies of natural floral essences emphasize the value of high quality substitutes. Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these Norda substitutes as an answer to the scarcity of natural floral oils.

NORDA Essential Oil and Chemical Co., Inc.

Chicago Office
325 W. Huron St.

Los Angeles Office
2800 E. 11th Street

St. Paul Office
253 E. 4th St.

Toronto Office
119 Adelaide St., W.

New York Office
601 West 26th St.

Montreal Office
135 Commissioners St., W.

New Gillam Soap Plant Open

Gillam Soap Works, Ft. Worth, Tex., whose soap factory was completely destroyed by fire Oct. 27, 1942, has in its stead a new, modern, fireproof plant. The new concrete building covers 30,000 square feet of floor space, and has been almost completely re-equipped. The plant is capable of producing 6,000 pounds of flake soap per hour, but under present operating conditions will perhaps produce only 2,000 pounds per hour. In addition to its line of "Blue Bonnet" soap and chemicals, chip, flake and powdered soap for the laundry, home and dry cleaning industry, laundry bar soap, liquid hand soap, scrub soap and shampoos, the Gillam line includes drive way cleaner, floor wax, bleach, polishes, pine oil disinfectant, insecticides, fly spray, floor sweep and a sterilizer.

N. Y. Trade Board Meets Dec. 14

The New York Board of Trade will hold a luncheon meeting on Dec. 14, at the Hotel Astor, to hear L. F. Livingston of E. I. du Pont de Nemours & Co. speak on "Chemistry at War and Preparing for the Post War Era." In addition to his talk, Mr. Livingston will demonstrate some of the many developments that will be commonplaces in our homes shortly after the war. Dec. 14 is also the annual meeting of the board of directors. Officers will be elected at a brief business session.

T. G. A. Founds Scientific Section

The Toilet Goods Association, New York, has established a Scientific Section which will broaden and expand the work previously done by the Scientific Advisory Committee, as well as part of the work of the association's Board of Standards. This move is in conformity with a recommendation made at the last annual convention of the association. H. D. Goulden, director of the association's Board of Standards, has been appointed temporary chairman to serve until the 1944 annual convention. At the same time, plans are being formulated for a special meeting of the Scientific Section, which it is thought will be held sometime in January. The following temporary program committee has been appointed to assist Mr. Goulden in developing plans for the special meeting: Dr. K. L. Russell, Colgate-Palmolive-Peet Co.; L. B. Dobie, Bristol-Myers Co.; J. R. Martin, Coty, Inc.; Dr. E. C. Merrill, United Drug Co.; Dr. Frederick J. Austin, Hudnut Sales, Inc., and Dr. H. Coutinho of George W. Luft Co.

Unilever Profits Drop Sharply

A sharp drop in the profits of Holland's largest soap and margarine manufacturers was recorded in 1942, the Lever Brothers and Unilever, Ltd., annual report, recently received in London, shows. A net profit of $810,000 was earned *by the Dutch company* in 1942 as against $2,012,000 in the previous year and $9,210,240 in 1940. No dividend was paid on the ordinary or common stock. On its 7,6, and 5 per cent preferred stock it paid 80 per cent of the stipulated dividend, 5.6, 4.8 and 4 per cent respectively. Undivided profits were reduced from $3,529,440 to $491,940.

Points for Waste Fats

Beginning Dec. 13, two meat (brown) ration points will be exchanged for every pound of waste fats turned in to retailers, the OPA announced Nov. 20. It is hoped by the OPA that as a result of the offer of ration points, housewives may be encouraged to boost substantially their present rate of waste fat salvage—estimated at ten million pounds per month. Later it is expected that tokens will be used as soon as they are available. The recently announced OPA plan to exchange meat points for fats turned in to the salvage drive was proposed editorially in *Soap & Sanitary Chemicals* shortly after the drive began.

Name Destroyer for P & G Hero

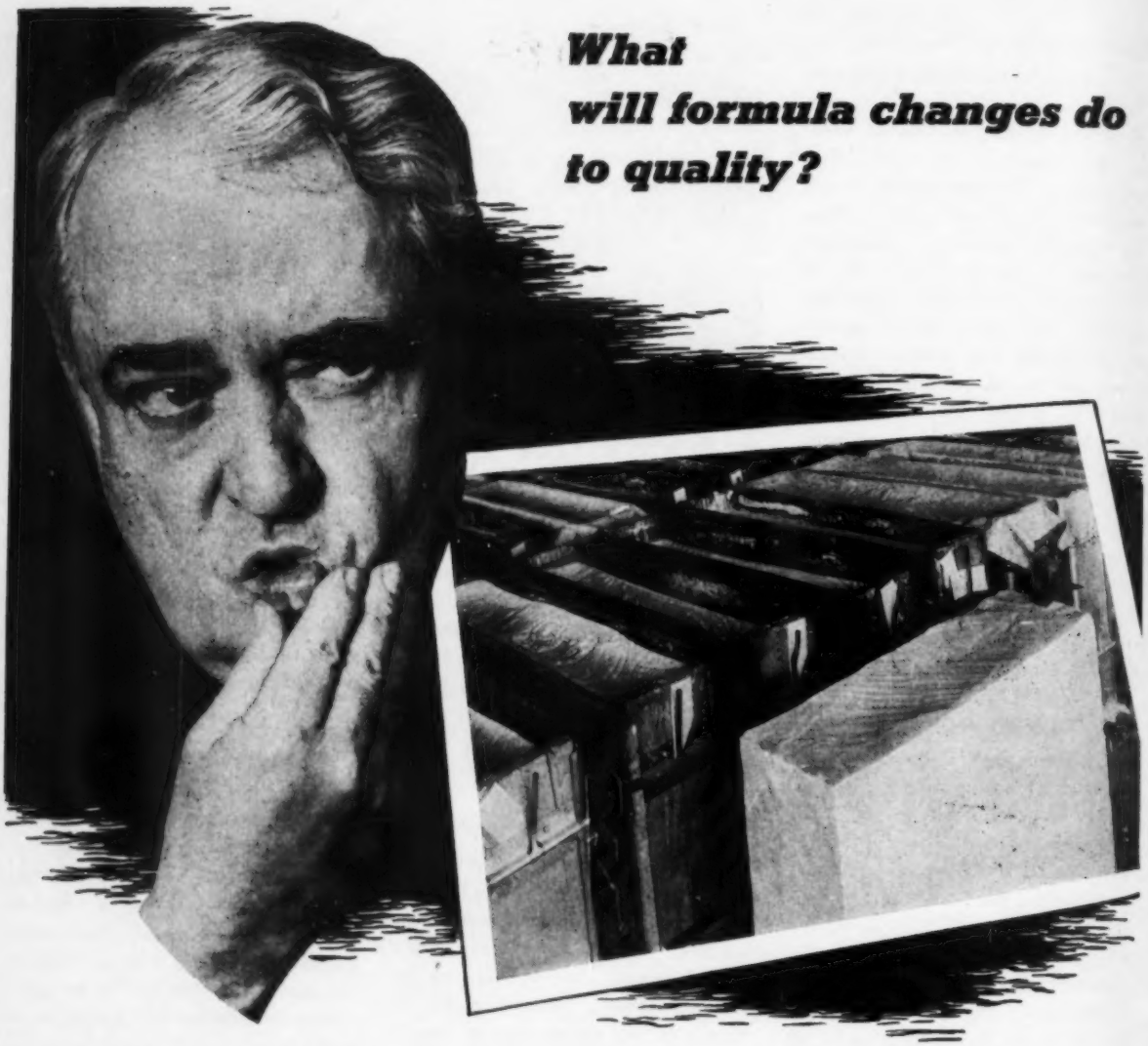
Ensign Arthur J. Roberts, Jr., first war casualty of Procter & Gamble Co.'s Chicago factory staff, has been posthumously honored by having his name assigned to a recently launched navy destroyer escort vessel. Ensign Roberts was killed during the Solomon Islands battles. He was posthumously awarded the Purple Heart medal.

Turco Opens New Lab

Turco Products, Inc., cleaning compound makers, Los Angeles, have just opened an organic research laboratory. Dr. Nathaniel Baum has been appointed head of the new department. Dr. Baum comes to Turco from Chicago where he had been a consulting chemist for the past six years. He received his doctor's degree in chemistry at Columbia University in 1930.

W. J. McCafferty Leaves C-P-P

William J. McCafferty, formerly with Colgate-Palmolive-Peet Co., Jersey City, N. J., recently joined the sales force of Richard Hudnut, New York cosmetic firm.



What will formula changes do to quality?

PQ SILICATES OF SODA YOU SHOULD KNOW:

"N"—Popular low alkaline solution, 41° Baumé. Approximate ratio: 1:3.22.

"K"—More alkaline than "N", a 47° Baumé solution. Approximate ratio: 1:2.90.

"C"—Alkaline solution, 59.3° Baumé. Approximate ratio: 1:2.00.

SS-C-Pwd.—Anhydrous powdered sodium silicate. Ratio: 1:2.00. Slowly soluble.

Ask for Bulletin 17-1 which describes 30 PQ Silicates.

This may be one question that crosses your mind where new fats and oils are to be utilized. But formula adjustments have been made before . . . your PQ Silicates proved dependable standbys then and will now.

PQ Silicates meet formula changes easily. For one thing, their uniform quality keeps production running smoothly. And for another, you know definitely that they contribute to flakes, powders or bars those important qualities of better sudsing, dirt suspension and prevention of dirt redeposition.

If in doubt as to the right silicate for a new formula, please get in touch with us. Our experience is at your disposal. Samples of any silicate are yours for the asking. Why not call on PQ?

PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

Push New Fat Salvage Drive

WITH a goal set for the coming year of three hundred million pounds of salvaged household fat, an extensive campaign to promote the lastest drive was scheduled to get under way Nov. 15. The new drive, which will require a monthly recovery nearly three times the 9,065,000 pounds salvaged in August, 1943, latest month for which complete figures are available, will benefit from the impetus of two developments announced within the last fortnight. The first, a program which has been urged since the early days of waste household fat salvage by many observers, is the exchange of two meat ration points for every pound of waste or used household fats turned in. This exchange agreement goes into effect Dec. 13.

The second development came in the form of an announcement by chairman of the American Fat Salvage Committee, Roy W. Peet, vice-president, Colgate-Palmolive-Peet Co., Jersey City, N. J., who told of a plan whereby the 23,000 agents of the Railway Express Co., throughout the country will help speed salvaged household fats to plants where they will be converted into glycerine and other war products. The 23,000 Railway Express agents in the United States have been instructed to call at meat stores, 250,000 of which pay four cents a pound for used household fats, for any amount of fat on hand, to see that shipments are routed immediately to the nearest rendering plant. Pointing out that collections have been low in small towns and rural areas, many of which are not visited regularly by renderers' trucks, Mr. Peet said that "these areas are potentially the source of hundreds of thousands of pounds of used kitchen fats—perhaps more than the cities because of the greater amount of home cooking and home-grown meat." This cooperation on the part of the Railway Express agents should overcome reluctance of some meat dealers to accept fat savings from householders because of lack of satisfactory pick-up service, which has often resulted in the dealers' storage space being taken up with quantities of fats, thus creating sanitary hazards, according to Mr. Peet.

ROY W. PEET

According to an announcement released by the Fat Salvage Committee, a minimum of 300 million pounds of salvaged fat is necessary to prevent reserve stocks of oils and fats falling below the safety level. Every homemaker must save at least 12 pounds of fat per family a year, a pound a month or one tablespoon each day as the absolute minimum. As the war progresses, the Allies' need for industrial materials is accelerating and the seriousness of the national situation with respect to fats and oils is increasing.

As a part of the "new approach" to the salvage problem, newspapers will be the chief media to present this nationally important project to homemakers. Advertising is expected to be placed in every English language daily newspaper in the United States—1,655 newspapers in 1,330 markets. Another phase of this approach is the establishment of a "Fat Salvage Information" service, coordinating with the War Production Board and other governmental agencies. It has been set up for newspapers, state and local officials, civic organizations and volunteer units, with a news feature service for women's pages, picture pages, special sections, weekly and trade publications.

Realistically, the Salvage Committee's announcement states: "Salvaging household fat is a tough job, messy and certainly not glamorous . . ." It makes certain concessions not considered necessary in the early days of the drive: "No matter how black or smelly pan scrapings and drippings may be, they will yield crystal-clear glycerine 21 days after they have been delivered to a meat dealer. All forms of used fats and oils are salvageable, all have a high glycerine content. ALL household fats are needed and wanted, pan scrapings, grease used to cook onions and fish, soup skimmings, vegetable, animal and fish fats and oils of every sort."

Among other interesting statistics given out by the Fat Salvage Committee, this one stands out: "Only 52 per cent (of American women) have actually turned in fats at any time since the campaign started. And it seems quite probable that our entire current volume is being obtained from as little as one-third of the total housewives."

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Lund Again Heads Packagers

Among the officers re-elected by the Packing Institute at its recent meeting at the Hotel New Yorker, New York, Nov. 4-5, was Joel Y. Lund, president, who is vice-president of Lambert Pharmacal Co., St. Louis. At the meeting it was announced that the semi-annual meeting of the Institute will be held on Wednesday evening, March 29, 1944 at the Palmer House, Chicago.

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Largest Caustic Soda Plant

Announcement was made late last month of the completion of the largest liquid chlorine and caustic soda plant ever built in a single unit east of the Mississippi by the Columbia Chemical division of the Pittsburgh Plate Glass Co. The plant is located at Natrium, W. Va.

TECHNICAL SPECIALTIES

MORE and more, the application of odoriferous principles as a means of neutralizing or "blanketing" the unpleasant and sometimes offensive odors which characterize certain commercial products is becoming a merchandising factor of measurable consequence. Obviously this use of aromatics in so-called technical products differs from their use in perfumery in that the problem is *not* one of creating an aesthetic appeal, necessarily, but rather one of modifying an undesirable quality. And since the profit margin on most technical preparations is small, a major consideration in the selection of a deodorant is its economical coverage of the product's objectionable character. This must be as complete and as pleasant as possible and without interference with the operation or purpose for which the product is intended.

It has been found that certain of the cheaper or stronger essential oils — or their imitations, and sometimes even straight aromatic chemicals, fulfill this purpose quite effectively. But after years of research and cooperation with the manufacturers of many of our country's leading technical products, the conclusion seems well established that no single oil or chemical will give as complete and satisfactory coverage per dollar spent as will a compound designed specifically for a definite technical use. For this reason, the manufacturer's best procedure before adopting any one masking or odorizing agent is to have his product subjected to careful laboratory observation in order to determine the most effective and least costly means of accomplishing the desired results. Every product represents a separate and distinct problem and should be treated as such.

The accompanying list of Technical Specialties suggest but a few of the many possible products and applications wherein the neutralization or re-odorization of unpleasant odor affects is being achieved economically through the use of specially prepared, low cost aromatic compounds.

GENERAL DEODORANTS

BOUQUET #149 ..... *A sweet, strong vanilla type.*

DEODORANT #9 ..... *A powerful, diffusive, covering agent.*

JAVOLLAL ..... *An effective substitute for citronella. Imparts a cleaner, finer, more appealing odor to insecticides, disinfectants and technical mixtures.*

NEUTROLEUM ALPHA .. **NEUTROLEUM GAMMA** . *These are among the most widely used deodorizing materials. They neutralize and perfume at very low cost. Also useful in all preparations based upon petroleum distillates.*

SAFRELLA ..... *This is a low priced substitute for artificial sassafras which it resembles closely in odor and strength. It is used in insecticides, germicides and numerous other technical mixtures.*

SPRAY DEODORANTS

The following deodorants effectively cover the objectionable odor of the toxicant as well as of the base material. They are highly soluble and can be used alone where a mildly scented or practically neutral odor is desired, or in conjunction with a perfume.

DEODORANT #11 ..... *Vanilla type.*

DEODORANT #P-36 ..... *A sweet, powerful lilac complex, especially for sprays based upon Lethane 384 Special.*

DEODORANT #P-38 ..... *Diffusive, pleasant jasmine character.*

DEODORANT #P-40 ..... *Orange blossom type.*

DEODORANT #P-41 ..... *A lily complex.*

DEODORANT #P-43 ..... *A fruity, jasmine type.*

DEODORANT #62 ..... *A technical bouquet, possessing clean, refreshing, lasting odor. Provides good coverage.*

THANITE DEODORANT #59 / **THANITE DEODORANT #60** / **THANITE DEODORANT #61** *These are very effective covering agents. They provide an odor neutralizing effect upon the toxicant, especially Thanite. #59 is a bouquet effect, slightly oriental; #60 is a floral bouquet; #61 is a clean, "neutral" type.*

SPRAY PERFUMES

These compositions are especially designed to give the utmost coverage and to lend to the product a fragrant, appealing note. All are soluble, highly concentrated blends

BOUQUET #301 ..... *A sweet, spicy bouquet of clean, refreshing character.*

CEDAR #5 ..... *Very popular cedar-pine effect.*

HONEYSUCKLE #15 ..... *A full, deep honeysuckle note.*

INDIAN HAY #6..... *A sweet, spicy composition carrying a grasslike note.*

KASMA #8 ..... *A lavender-geranium-petitgrain blend.*

LAVENDER #29 ..... *A distinct lavender type; gives very effective coverage.*

LILAC #28 ..... *This composition has appealing tonality and provides excellent coverage.*

LILY #20 ..... *A fragrant, refreshing note.*

MINT #5 ..... *Fresh, minty character.*

NEW MOWN HAY #7.... *A pleasant, new mown hay effect.*

PINE #14 ..... *Straight pine type; has a pungent odor.*

ROSE #64 ..... *Good odor value; economical in use.*

SWEET CLOVER #5..... *This unique composition affords excellent coverage. Has a clean topnote.*

SWEET PEA #19..... *A good, practical odor effect for sprays.*

VIOLET #22 ..... *Imparts a distinct and characteristic note.*

OTHER APPLICATIONS

We are prepared to consult with and recommend or develop masking agents and re-odorants for numerous other products, such as:

CLEANING FLUIDS and NAPHTHAS, CUTTING OILS, FUEL and LUBRICATING OILS, LATEX, NATURAL and SYNTHETIC RUBBER PRODUCTS, LEATHER, PARA BLOCKS, PAINTS and LACQUERS, PLASTICS, PRINTING INKS, STARCHES, TAPE, PASTE or GLUE, TEXTILES, WAXES, POLISHES and SHOE POLISHES, etc.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

Hear Lever Bros. Appeal

THE U. S. Circuit Court of Appeals, Baltimore, heard argument early last month in the appeal of Lever Brothers Co., Cambridge, Mass., from a federal district court decision denying a judgment against Procter & Gamble Co., Cincinnati, in Lever Brothers patent infringement suit against P&G in the manufacture of new "Ivory" soap. Lever charged that Procter & Gamble infringed upon a process developed by John W. Bodman, Lever director of research, resulting in the manufacture of "Swan" soap, which was placed on the market early in 1940, only to be followed a few months later by the appearance of "new Ivory" soap. Lever Brothers charged in the case which was argued before a Baltimore court for three weeks and included 3,000 pages of testimony, argument and exhibits, that the lower court erred in denying judgment on the grounds that Mr. Bodman did not include a suffiicently wide temperature range in his original patent application. Thus, Procter & Gamble's process for the manufacturing of "new Ivory" came outside that range, although it conceded that Bodman had made "real discovery."

The "Swan" manufacturers said that the patented process, operating at any temperature in the specified range, was as new and as much a useful discovery as if it operated at 190° F. (Bodman's temperature recording), and that P&G would never have abandoned the old framing process and adopted the Bodman process at a temperature as low as 157 degrees if the "new Ivory" product was not a radical improvement in floating soap.

There were two principal soap-making processes prior to Bodman's invention, Lever Brothers claimed. They resulted in framed or floating soap and milled soap. With the advent of the Bodman process, however, it was claimed a floating soap having the fineness in texture of a milled soap that would not warp and was desirable for toilet purposes resulted. Procter & Gamble charged that Bodman broadened the temperature range of the process after "new Ivory" had appeared on the market and denied that it had obtained samples of the Bodman product from disloyal employees, as charged. P&G further countered that it was against the law for Lever to compete with "Ivory" with a cake of soap which in size, shape, color and even in perfume likeness was so closely like "Ivory" that the public would think the new product was a varient of "Ivory" soap and made by Procter & Gamble.

The court, which is at present sitting in its November term in Baltimore, has the appeal under consideration.

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Jean Vivaudou in Larger Quarters

Jean Vivaudou Co., New York, has leased a 3-story building at 146-50 W. 63rd St., containing about 22,000 sq. ft., of floor space which will be remodeled and equipped to handle increased business.

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Florasynth Officer Group Set

In addition to other changes in the make-up of the official family of Florasynth Laboratories, Inc., New York, announced last month, Charlotte F. Senior continues as assistant secretary and assistant treasurer.

Soap Sales Up in 3rd Quarter

TOTAL soap sales, both from the standpoint of pounds and dollar volume, rose sharply in the third quarter of 1943, as compared to the previous quarter. Sales of soap for the third quarter, ending Sept. 30, not including liquid soap, totaled 699,282,815 pounds, as compared with 654,963,569 pounds in the second quarter, an increase of 6.8 per cent. However, the 1943 third quarter shows a decrease of 6.1 per cent when compared with the third quarter of 1943 when a total of 744,500,978 pounds were sold. The 699 million pound sales in the third quarter of this year are 11.3 per cent above the quarterly sales average for the five-year period between 1935 and 1939.

The dollar value of soaps other than liquid sold in the third quarter of 1943 increased markedly to $94,176,308, an increase of 11.8 per cent above the $84,216,485 total for the second quarter of this year. The 1943 third quarter also shaded the 1942 third quarter by two-tenths of one per cent. Dollar value comparisons for the first nine months of 1943 compared with a similar 1942 period show that this year's cumulative figure for the first three quarters is $268,678,109, which is 2.8 per cent less than the 276 million dollars of deliveries in the first nine months of 1942. The five-year average for the third quarter is $59,898,380 as compared with $94,176,308 for 1943's third period.

Liquid soap sales also rose in the third quarter to 897,174 gallons, as compared with 720,377 in the second quarter, an increase of 24.5 per cent. Percentagewise, this year's third quarter is 66.2 per cent above the 1942 third quarter when 539,792 gallons were sold. In addition to volume increases, liquid soap dollar totals were up in the third quarter of 1943 to $903,729, as against $767,144 for the second quarter, representing an increase of 17.8 per cent.

In the first nine months of 1943 sales of liquid soap totaled 2,369,651 gallons, which is 27.1 per cent more than the 1,864,144 gallons sold in the first nine months of 1942. The dollar volume of such sales in the first nine months of 1943 was $2,451,886, which is 24.4 per cent more than the $1,970,345 of sales in the first nine months of 1942.

Soapers Exhibit at Hotel Show

Importance of fat saving in hotel kitchens was stressed by John T. Stanley Co., New York, soaps and cleaning supplies, as the theme of its exhibit at the 28th National Hotel Exposition, held Nov. 8-11 at the Hotel Commodore, New York. John W. Stanley, vice president, was in charge of the company's booth, assisted by John T. Stanley, secretary; T. H. Cook, sales manager, and J. C. Hosey, credit manager.

A general line of products for the promotion of sanitation was shown at the exposition by West Disinfecting Co., Long Island City, N. Y., with J. A. Martinka, service manager, in charge of the booth. Also at the booth were H. L. Fleming, E. T. Moriarty, H. Dreifoos and T. T. Davidson.

The J. P. Ford Division of Wyandotte Chemicals Corp., Wyandotte, Mich., exhibited its dishwashing products, maintenance cleaners and "Steri-Chlor" for germicidal uses. A. J. Bettelheim, regional supervisor, was in charge of the booth, assisted by John Pryor, J. J. L'Ecuyer, E. Nelson, L. Higginbotham, C. Dawkin, J. Hickson, J. Brady, G. Caffrey and C. W. Nicholas.

Phillips Merchants Chem. V.P.

William E. Phillips, formerly with Mathieson Alkali Works, was recently appointed vice-president of Merchants Chemical Co., Chicago. He is a graduate of Louisiana State University. Mr. Phillips will be located in the Chicago office of Merchants Chemical Co., Tribune Tower.

Canadian P&G Changes

Personnel changes, announced recently by Procter & Gamble Co. of Canada, include the appointment of H. H. Staff of Toronto and J. R. Baillie of Hamilton, as vice-presidents. Mr. Staff, district manager for several years, was named general manager as well. Mr. Baillie is manager of the company's manufacturing plant at Hamilton. R. B. Harris, manager of bulk products sales division, has been appointed secretary, and C. C. Uhland, advertising manager. In addition, some Canadian company activities formerly directed from the Cincinnati office will now be handled through Canada by the reorganized staff.

Drackett Personnel Changes

The following personnel changes were recently made at Drackett Co., drain pipe cleaner manufacturers, Cincinnati: Roger Drackett, formerly assistant to the president, has been named executive vice-president. A. H. Boylan, previously sales promotion manager, has been made vice-president in charge of advertising and marketing research. K. H. Jones, secretary, takes on the added job of treasurer and H. R. Drackett, president, becomes chairman of the board of Drackett Products Co., a subsidiary, while A. C. Shattuck, Jr., becomes president. R. B. Alspaugh has been appointed to the soy bean division.

Emulsion Cleaner

Enthone Co., New Haven, has recently introduced "Enthone Emulsion Cleaner," said to increase the effectiveness of alkaline cleaners in the washing of greasy metal parts. The liquid is described as an emulsifiable solvent of high penetrating power, particularly effective in removing metallic dust, carbon, dirt, and drawing compound fillers. Besides the form ready for use, it comes as a concentrate to be mixed with several volumes of solvent naphtha, and used in the same manner.

SOCMA Meeting Dec. 2

The 22nd annual meeting of the Synthetic Organic Chemical Manufacturers' Assn. was held Dec. 2, at the Hotel Biltmore, New York. Scheduled guest speaker at the dinner was William J. Orchard, president, Wallace & Tiernan Products, Inc., Belleville, N. J. A meeting of the board and the executive business session were to be held in the late afternoon, to be followed by the annual reports and election of officers for the coming year. Another speaker was to be Dr. Elvin H. Killheffer, a member of the board and national councillor to the U. S. Chamber of Commerce.

DCAT Elects Committee

The following 20 executives were recently elected to serve on the executive committee of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, it was announced Nov. 16, following the section's annual meeting at the Drug & Chemical Club, New York: Harold Altshul of Ketchum & Co., Inc.; Carl M. Anderson, Merck & Co.; William Merg, Winthrop Chemical Co.; Carl M. Bigelow, Calco Chemical division, American Cyanamid Co.; Hugh Crosson, McKesson & Robbins, Inc.; James DeCeasare, White Laboratories; Grover C. Hollings, Eli Lilly & Co.; R. J. Ingram, Bristol Myers Co.; Elvin Killheffer, E. I. du Pont de Nemours & Co.; Arthur Kinsman, Purepac Corp.; Charles Lightfoot, Anchor Hocking Glass Corp.; Robert Magnus, Magnus, Mabee & Reynard; Guy L. Marsters, Norwich Pharmacal Co.; Paul Miller, International Cellucotton Products Co.; Harold Pomeroy, G. S. Stoddard & Co.; Robert Quinn, Mathieson Alkali Works; J. P. Remensnyder, Heyden Chemical Corp.; Lloyd Volchening, Ivers-Lee Co.; William Weed, Niagara Alkali Co., and E. T. T. Williams, Becton, Dickinson & Co.

Serve on Govt. Contract Group

S. Bayard Colgate, chairman of the board, Colgate-Palmolive-Peet Co., Jersey City, and William H. Gessell, vice president, Lehn & Fink, Bloomfield, N. J., are among the members of a New Jersey State Chamber of Commerce committee of manufacturers to ascertain "a uniform and reasonable formula for the termination of war contracts." In announcing (Nov. 9) appointment of the committee, Thomas Roy Jones, president of the state chamber, emphasized that "failure of the government to develop a clear-cut policy on the subject of termination of war contracts may lead to large-scale unemployment and serious economic dislocation."

L. A. Soap Build Cooling Tower

A new cooling tower is being erected on the roof of the Los Angeles Soap Company's plant at 607 East First Street, Los Angeles.

GATEWAY TO PROGRESS

In early times, the Old Fort at Niagara was a strategic portal to the vast unexplored West. Scene of many historic episodes, this outpost was a landmark in man's pioneering quest for a new and better world.

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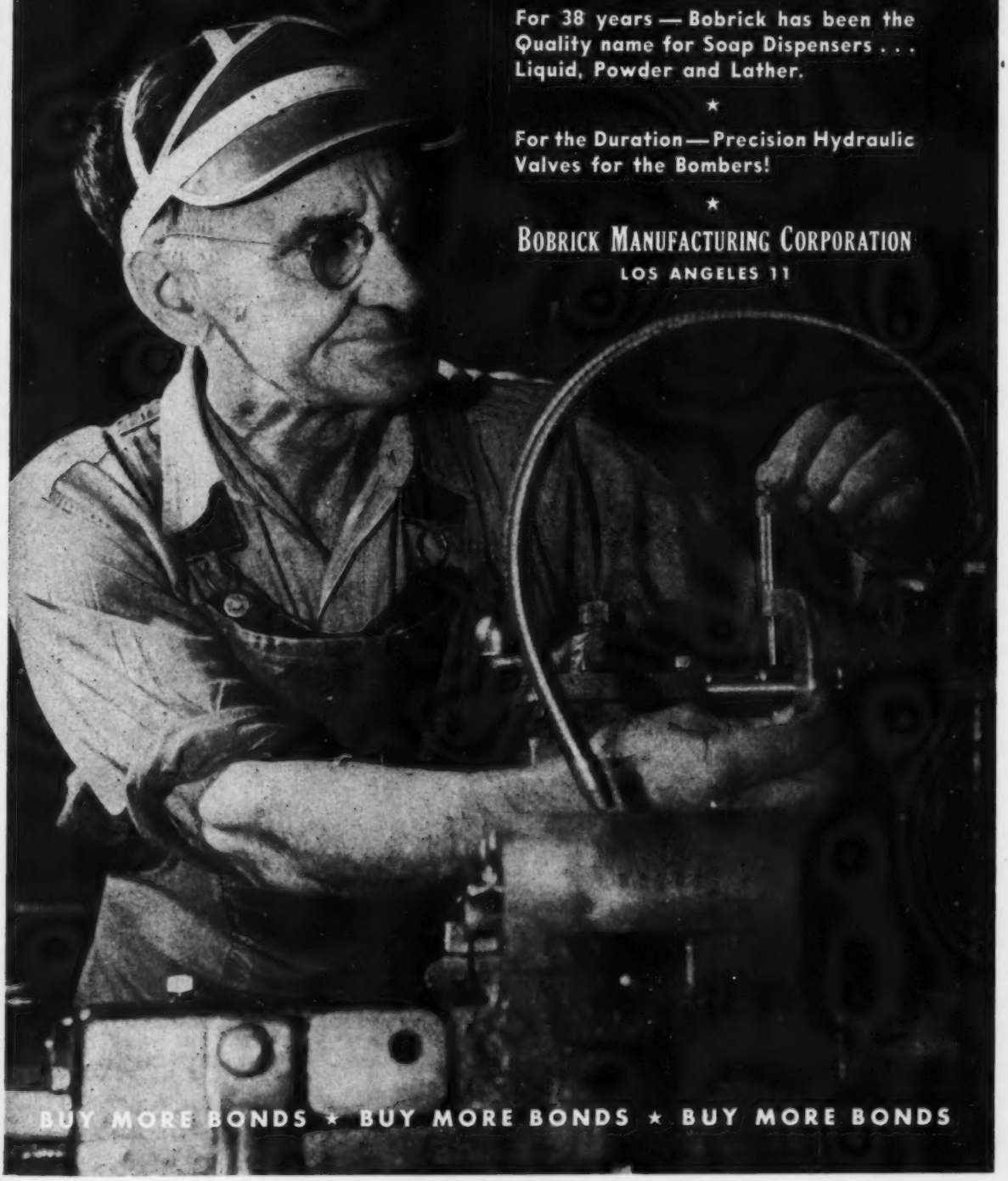

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BIDS AWARDS

N. Y. Navy Bids

The following bids have been received in a recent opening for miscellaneous supplies by the New York Navy Yard, on 10,000 gallons of dry cleaning solvent: W. J. Sutcliffe Co., East Rutherford, N. J., 16c; Air Pilot Oil Co., Secaucus, N. J., 17c including 182 drums at $1 each; and Globe Solvents Co., Philadelphia, 18.54c, including 189 drums at $1 each. On 11,000 gallons of rust-preventive compound, low bids were submitted by: R. M. Hollingshead Corp., Camden, N. J. on item 1, 97c; item 2, 95c; Brilco Labs., Brooklyn, on item 3, 76.5c; and item 4, 68c.

Announce Treasury Awards

In recent openings for miscellaneous supplies by the Procurement Division of the Treasury Department, Washington, D. C., the following bids and awards have been announced: 24,800 pounds of caustic soda—Alex C. Ferguson Co., Philadelphia, $3.24 per hundred pounds, accepted; 3,000 cans of shoe polish Whittemore Bros. Corp., Cambridge, Mass., 5.55c, accepted.

P. O. Soap and Soda Bids

The following low bids have been announced in connection with recent openings for miscellaneous supplies by the Post Office Department, Washington, D. C.: automobile soap for various destinations—item 1, 20 containers approximately 10 pounds each, Harley Soap Co., Philadelphia, 8c; item 2, 36 containers of approximately 50 pounds, Harley Soap Co., Philadelphia, 7.45c; item 3, 10 containers of approximately 250 pounds, Harley Soap Co., Philadelphia, 6.95c; and item 4, 35 barrels of approximately 500 pounds, Motor State Oil & Grease Co., Jackson, Mich., 6.5c, also, Peck's Products Co., St. Louis, 6.5c. On 100 pounds of caustic soda to be delivered to Washington, D. C., bids were received from Unity Sanitary Supply Co., New York, 8.5c; Industrial Distributors, New York, 4.75c and Rose Chemical Co., New York, 6.2c.

Marine Corps Wax Bids

Among the bids received in a recent opening for miscellaneous supplies by the U. S. Marine Corps, Washington, D. C., were the following in connection with an opening for 3,000 pounds of beeswax to be delivered fob Philadelphia: Candy Co., Chicago, 54.19c; Will & Baumer Candle Co., Syracuse, 53.5c fob Syracuse, 54.19c delivered; Innis Speiden & Co., New York, 54c; Whittemore White Co., Charlestown, Mass., 55c; Smith & Nichols, New York, 53.5c; N. Brittingham & Sons, Philadelphia, 95.4c and 64.3c; and Koster Keunen, New York, 53.25c accepted.

WFA Soap Award To Wrisley

In a special purchase for an unspecified quantity of toilet soap in a recent opening for miscellaneous supplies by the War Food Administration, Washington, D. C., Allen B. Wrisley Distributing Co., Chicago, submitted a bid of 16.3c a pound on 75,000 pounds, which was accepted.

Liquid Wax Bids

Two bids were received in a recent opening for miscellaneous supplies by the Washington Navy Yard, Washington, D. C., on an unspecified quantity of liquid wax. R. M. Hollingshead Corp., Camden, N. J., entered a bid of 93c a gallon on item 1, and James Good Co., Philadelphia, entered a bid of $1.10 on the same item.

N. Y. Navy Floor Wax Bids

Among the bids received in a recent opening for miscellaneous supplies by the New York Navy Yard, New York, were those on 880 gallons of floor wax entered by: Oil Specialties & Refining Co., Brooklyn, 62.5c a gallon, including 16 drums at $1.25 each; Fuld Brothers, Baltimore, 85c, including 16 drums at $1.10 each; Buckingham Wax Co., Long Island City, New York, $1.30, including 16 drums at $5 each and Continental Car-Na-Var Corp., New York, $2.65.

Tenn. Corp. Low On Fungicide

Tennessee Corp., Atlanta, submitted the low bid of $675 on 5,000 pounds of insoluble copper fungicide in a recent opening for miscellaneous supplies by the Department of Agriculture's division of Purchases, Sales and Traffic, Washington, D. C.

P. O. Cleaner Bids

Bids on 2,000 gallons of cleaner and renovator were received in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., from the following: Lasting Products Co., Baltimore, 97.5c, alternate $1.06; Synthetic Lacquer & Varnish Co., Philadelphia, 90c; Baltimore Paint & Color Works, Baltimore, 79c and R. M. Hollingshead Corp., Camden, N. J., $1.35.

WFA Soap Award To C-P-P

Colgate-Palmolive-Peet Co., Jersey City, N. J., entered a bid of 18c which was accepted in a recent opening by the War Food Administration for 277,236 pounds of toilet soap.

Falk To Head Oils Bureau

Leon Falk, Jr., vice-president of the Commodity Credit Corporation, has been named chief of the Fats and Oils Branch, Food Distribution Administration, effective Dec. 1, to succeed Charles T. Prindeville, who is returning to his former private business post as vice-president of Swift & Co., Chicago. Mr. Falk, in his capacity as vice-president of the CCC, has been in charge of purchases and sales of foreign commodities. He entered Government service with the Office of Coordinator of Inter-American Affairs shortly after the outbreak of war, and later became chief of the Fats and Oils section of the Board of Economic Warfare.

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TRADE MARKS

The following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks

C-S-O—This in extra bold upper case letters for an antiseptic emulsion. Filed Aug. 13, 1942, by Hughes Pharmacal Co., San Antonio. Claims use since Apr., 1931.

MITTS—This in extra bold upper case letters on the outline of a hand for skin protective lotion. Filed Apr. 14, 1943, by Mitts Manufacturing Co., Brooklyn. Claims use since Nov., 1940.

SHORE LEAVE KIT—This in upper case bold letters for after-shave powder, after-shave lotion, cologne and brilliantine. Filed July 23, 1943, by Irene Blake Cosmetics, Inc., New York. Claims use since Oct. 1, 1942.

JOSEPH K. FISHER—This in upper and lower case script letters beneath the portrait of the applicant for germicide, deodorant, and disinfectant. Filed Aug. 18, 1943, by Joseph K. Fisher, Columbus, O. Claims use since May 28, 1943.

MAIZO—This in upper case extra bold letters for fur cleaning and metal burnishing compounds. Filed Aug. 21, 1943, by The Maizo Mills Co., Circleville, O. Claims use since Apr. 5, 1924.

DR. SMITH'S SULFA-DENT—This in upper case and extra bold letters for tooth paste and powder. Filed June 15, 1943, by S. P. D. Products Co., Sedan, Kansas. Claims use since Feb. 24, 1943.

LACQUEROL—This in upper and lower case bold letters for hand and skin creams. Filed Aug. 13, 1943, by Associated Distributors, Chicago. Claims use since June 13, 1938.

SKEETO-NOX—This in extra bold upper and lower case letters for mosquito and gnat repellent. Filed Aug. 19, 1943, by Wisconsin Pharmacal Co., Milwaukee. Claims use since 1914.

PIONITE—This in upper case bold stencil letters for soluble alkaline cleanser. Filed Apr. 7, 1943, by Pioneer Salt Co., Philadelphia. Claims use since Dec. 21, 1941.

POTASSUL—This in upper case bold letters for detergent and cleaning preparation. Filed May 10, 1943, by Drew Laboratories, Chicago. Claims use since Sept. 10, 1942.

ISEKREME—This in upper and lower case extra bold letters for brushless shaving cream. Filed June 11, 1943, by Middlebrooke Lancaster, Inc., Brooklyn. Claims use since Nov., 1937.

OLD FAITHFUL—This in extra bold upper case letters for liquid soap and cleaner. Filed Aug. 16, 1943, by Hanley & Kinsella Laboratories, Inc., St. Louis. Claims use since Aug. 2, 1943.

JACK POT—This in extra bold, black upper case letters for scouring pads. Filed Aug. 28, 1943, by Turco Products, Inc., New York. Claims use since May 15, 1943.

KANIX—This in bold upper case stencil letters for soap. Filed Aug. 30, 1943, by The Selig Co., Atlanta. Claims use since Aug. 17, 1943.

P-38—This in extra bold upper case letters for metal cleaning and polishing preparation. Filed Sept. 16, 1943, by Fal Products Co., Philadelphia. Claims use since Sept. 4, 1943.

RADIO—This in upper case extra bold letters for metal polish and cleanser. Filed Sept. 16, 1943, by United Chemical Co., Kansas City, Mo. Claims use since Oct., 1918.

ODOLEUR—This in bold upper and lower case script letters for perfumed deodorant. Filed July 1, 1940, by Farel Destin, Inc., New York. Claims use since June 11, 1940.

LEM-ODE—This in upper and lower case bold letters above a black inverted pyramid design for shampoo. Filed Aug. 29, 1941, by Ambler Products Co., Ambler, Pa. Claims use since Jan. 5, 1936.

LOTANG—This in small upper case medium letters within a rectangular design for tooth powder, paste, dentrifrices, deodorants, shampoo, etc. Filed Aug. 30, 1943, by All Purpose Aromatics Co., New York. Claims use since Aug. 24, 1943.

MAN ABOUT TOWN—This in small upper case bold letters within a rectangular design for tooth powder, shampoo, tooth paste, dentifrices, foot powders, deodorants, etc. Filed Aug. 30, 1943, by All Purpose Aromatics Co., New York. Claims use since Aug. 24, 1943.

LUSTERLOCK—This in upper case open letters above a fanciful lock design for fur dressing compound. Filed Sept. 3, 1943, by Persianizing Co., New York. Claims use since Jan. 25, 1942.

SIDRUS—This in upper case bold letters for liquid athlete's foot preparation. Filed by Valley Drug Co., Youngstown, O. Claims use since Apr. 14, 1943.

HYDROCIDE—This in upper case extra bold letters for germicides, fungicides and/or disinfectants. Filed Sept. 22, 1943, by Rohm & Haas Co., Philadelphia. Claims use since Feb. 23, 1940.

FLORGARD—This in extra bold upper case letters for liquid wax for wood, linoleum and/or other types of flooring material. Filed Aug. 19, 1943, by Acme Chemical Co., Milwaukee. Claims use since May 1, 1942.

NYLOFOAM—This in extra bold upper case letters for soapless shampoo and wash for automobiles. Filed Aug. 24, 1942, by Nylofoam Co., Portland, Oregon. Claims use since Oct. 9, 1941.

SUPERTROL—This in upper and lower case extra bold letters for liquid detergent. Filed Mar. 24, 1943, by Turco Products, Inc., Los Angeles. Claims use since Oct. 29, 1939.

THE CHALLENGE OF CHANGING WARTIME PROBLEMS

is still being met by Du Pont Aromatics

DESPITE wartime difficulties, Du Pont has been able to meet most of the needs of the soap and perfume industry during the past year. The manufacture of aromatic chemicals has been increasingly arduous, but so far we have enabled perfumers to carry on.

The coming year may bring fresh problems for you and for us; but you can be sure that the technical resources of our Aromatics Laboratory will be working overtime, not only to provide the synthetics you need, but to maintain their complete uniformity, purity and consistency.

The Du Pont Aromatics research that led to the creation of many valuable products will continue to devise new and helpful solutions for tomorrow's problems as they arise.

Synthetic aromatics are a product of chemistry, and Du Pont Synthetic Aromatics reflect the skill of all the Du Pont laboratories. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Aromatics Section, 40 Worth Street, New York 13, N. Y.

Du Pont Aromatics

DU PONT

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

SHU-NU—This in extra bold upper case letters for shoe polish. Filed Apr. 9, 1943, by The G. Edwin Smith Shoe Co., Columbus, O. Claims use since Sept. 1, 1942.

W.O. No. 1—This in upper and lower extra bold black letters for metal cleaning preparation. Filed July 5, 1943, by Turco Products, Inc., Los Angeles. Claims use since Apr. 1936.

KWIXORB—This in upper case black bold letters for granular floor cleanser. Filed Aug. 16, 1943, by Equitable Petroleum Corp., New York. Claims use since June 29, 1943.

DISTISAN—This in bold upper case stencil letters for disinfectant, germicide and antiseptic. Filed Sept. 21, 1943, by The Selig Co., Atlanta. Claims use since Sept. 2, 1943.

RESISTO GLOSS—This in bold upper case letters for cleaning, waxing and polishing preparation. Filed May 26, 1943, by United Sanitary Chemicals Co., Baltimore. Claims use since June, 1940.

TRADE MARKS GRANTED

403,921. Tooth paste, hair dressing and tonic. Filed by Benjamin R. Brody, New York, Apr. 16, 1941. Serial No. 442,625. Published July 6, 1943. Class 6.

403,926. Chemically treated cloth for preventing fogging of glass. Filed by Mistoff Products, Montclair, N. J., May 25, 1942. Serial No. 453,245. Pub. Aug. 17, 1943. Class 4.

403,929. Rust, corrosion, scale and acid protectant. Filed by Pure Oil Co., Chicago, Aug. 8, 1942. Serial No. 454,810. Published Aug. 10, 1943. Class 6.

403,973. Leather cleaner, vitalizer and preserver. Filed by R. M. Hollingshead Corp., Camden, N. J., May 15, 1943. Serial No. 460,649. Published Aug. 17, 1943. Class 4.

403,979. Bed bug spray. Filed by United Sanitary Chemicals Co., Baltimore, May 26, 1943. Serial No. 460,939. Published Aug. 10, 1943. Class 6.

403,980. Insecticide. Filed by United Chemicals Co., Baltimore, May 26, 1943. Serial No. 460,943. Published Aug. 10, 1943. Class 6.

403,980. Disinfectant. Filed by United Chemicals Co., Baltimore, May 26, 1943. Serial No. 460,945. Published Aug. 10, 1943. Class 6.

403,984. Insecticides. Filed by Koch Brothers Butchers' Supply Co., North Kansas City, Mo., May 27, 1943. Serial No. 460,961. Published Aug. 10, 1943. Class 6.

403,987. Diluent or carrier for insecticidal agent. Filed by Floridin Co., Warren, Pa., May 28, 1943. Serial No. 460,990. Published Aug. 10, 1943. Class 6.

404,006. Rat poison. Filed by Wisconsin Pharmacal Co., Milwaukee, June 14, 1943. Serial No. 461,404. Published Aug. 10, 1943. Class 6.

404,010. Aluminum cleaner. Filed by Club Aluminum Products Co., Chicago, June 21, 1943. Serial No. 461,546. Published Aug. 17, 1943. Class 4.

404,070. Ammonia. Filed by Bessire & Co., Indianapolis, July 22, 1942. Serial No. 454,398. Published Aug. 31, 1943. Class 6.

404,078. Seed disinfectant and protectant. Filed by Bayer Semesan Co., Wilmington, Mar. 5, 1943. Serial No. 458,982. Published Aug. 24, 1943. Class 6.

404,093. Boiler cleaner and scale remover. Filed by North American Fibre Products Co., Cleveland, May 3, 1943. Serial No. 460,379. Published Aug. 24, 1943. Class 6.

SYNTHETIC DETERGENTS

(*From Page 29*)

active agent, is generic and refers to compounds which are adsorbed at an interface, changing the physical (colloidal) properties of the system. Additional, more specific terms are drawn from two sources: the industrial applications and the theories which explain their function.

Chemically these compounds range from definite entities to unknown mixtures. In general, however, surface active agents are characterized by a relatively large molecule which has two molecular components of different affinities. They are usually of low volatility. In aqueous solution, they are of three types in terms of electrolytic dissociation — anionic, cationic, and non-ionic.

Surface and interfacial tension data provide the best general method for comparing and evaluating surface-active agents. Such data are related to special application tests of empirical nature, and the latter can be calibrated with surface-tension data.

Process control can be accomplished by means of surface-tension measurements. Selection of a suitable material can be simplified by charting the surface-tension region in which adequate wetting is obtained, and then maintaining the bath against exhaustion within these limits by this measurement.

(In Part II, to be published subsequently, specific application tests, —requiring for the most part only simple apparatus,—will be described.)

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(11) Harkins, W. D., and Jordan, H. F., *Jour. Am. Chem. Soc.*, *52*, 1751 (1930).
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(14) McBain, J. W., "Solubilization and Other Factors in Detergent Action," Chapter in "Advances in Colloid Science," Interscience Pub,. N. Y. C., 1942.
(15) Smith, J. E., *Ind. Eng. Chem.*, *31*, 40-43 (1939).
(16) Snell, F. D., *Soap*, *19*, 27-30 (Oct. 1943); *19*, 31-33, 73 (Nov. 1943).
(17) Snell, F. D., *Ind. Eng. Chem.*, *35*, 107-117 (1943).
(18) Van Antwerpen, F. J., *Ibid.*, *35*, 126-30 (1943).
(19) "Wetting and Detergency," Symposium, London, A. Harvey, 1937.

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MARKETS

As of November 29, 1943

A NUMBER of developments which have taken place during the past month affecting the oils and fats supply picture have made the outlook for those materials brighter than at any time since the United States went to war—just about two years ago. The overall supply picture—both domestic and import—has improved sufficiently for the War Food Administration to announce early in November that 2,168,000,000 pounds of fats and oils are to be made available for soap manufacture in the coming year, and retroactive to Oct. 1, 1943. In 1942, 1,871,000,000 pounds of primary fats and oils were used and in 1941—a record year—2,144,000,000 pounds were consumed. The increased quantities of oils and fats to be used by soap makers in the coming months tend to confirm the Department of Agriculture's belief that the total product of fats and oils from domestic materials in 1943-44 will be in the neighborhood of 11.5 million pounds compared with 10.6 a year earlier and 9.5 billion pounds 2 years before. At the same time, the Department of Agriculture, in its bulletin on the fats and oils situation, thinks that imports may increase due to an improvement in ocean shipping conditions, but this may be off-set by our own exports to Allied nations and to European countries. Further, the bulletin states: "despite increased production in North America, world supplies of fats outside the Japanese controlled area are still substantially under the pre-war level."

Little Change in Tallow Output

The outlook for the production of indelible tallow and greases, according to the Department of Agriculture, may not be greatly different in 1944 than in 1943. The reason being that the number of cattle slaughtered probably will be larger next year than in the present year but average weights are thought likely to be less. Hog slaughter will be very large next winter and spring. However, with a smaller spring pig crop expected, hog slaughter (and grease production) probably will be reduced beginning in the fall of 1944.

Relax Red Oil Ban

Another favorable omen on the oils and fats horizon, indicative of the general state of supplies, was the announcement by the Food Distribution Administration last month that red oil would be made available for use in the manufacture of soap providing applications for use were in the hands of the FDA by Nov. 29. Approximately one million pounds of saponified red oil were reported to be available for soap makers' use in the month of December. And as if this weren't enough to prove the healthier condition of fats and oils supplies, quotas of fish oil for soap use were increased by the FDA.

Meanwhile, hog receipts at ten markets including Chicago are said to have totaled 679,746 for the week ending Nov. 13, which were the largest weekly receipts for the past several years. Receipts for the same week last year totaled 430,599 head. This, naturally, is reflected in lard stocks which are reported to have been piling up, and which have become a logical raw material for soap.

WFA Fats Purchases Small

Pressure has also been taken off the fats and oils supplies by the lightening of purchases by the War Food Administration, particularly in the five weeks ended Oct. 2, when they dropped to 68 million pounds compared with a monthly average of 175 million pounds in the January-to-July period. Although higher than the 47 million pounds purchased in August, the September purchases consisted chiefly of 30 million pounds of vegetable oils (mostly edible linseed oil), according to the Department of Agriculture, and 29 million lbs. of butter.

In the essential oil field, talk continues of the possibility of establishing dollars-and-cents price ceilings at dealers' levels. OPA is reported to have held informal meetings with members of the essential oil trade to discuss methods of stabilizing the prices of some of the domestic oils, in an effort to preclude the possibility of extra-legal price irregularities. Several methods of pricing have been described as being under consideration, with the OPA being said to favor the specific dollars-and-cents method of coping with the situation. Few price variations were noted with supplies becoming shorter and shorter, and no word as to increased imports from areas from which the enemy has been dislodged.

Further investigation as to costs and pricing of peppermint oils is under way, according to reports. The work is being carried on by the Department of Agriculture to determine what the farmer considers a fair price and what his plans are for raising next year's peppermint crop. As the oil supply situation is primarily one for the Department of Agriculture to look after, that Department, not the OPA is conducting the investigation.

Talk of greater quantities of red squill importations is being heard now that the Mediterranean area is being cleared of enemy forces. One report indicated that about one hundred tons had arrived in the United States and that another couple of hundred are available for importation.

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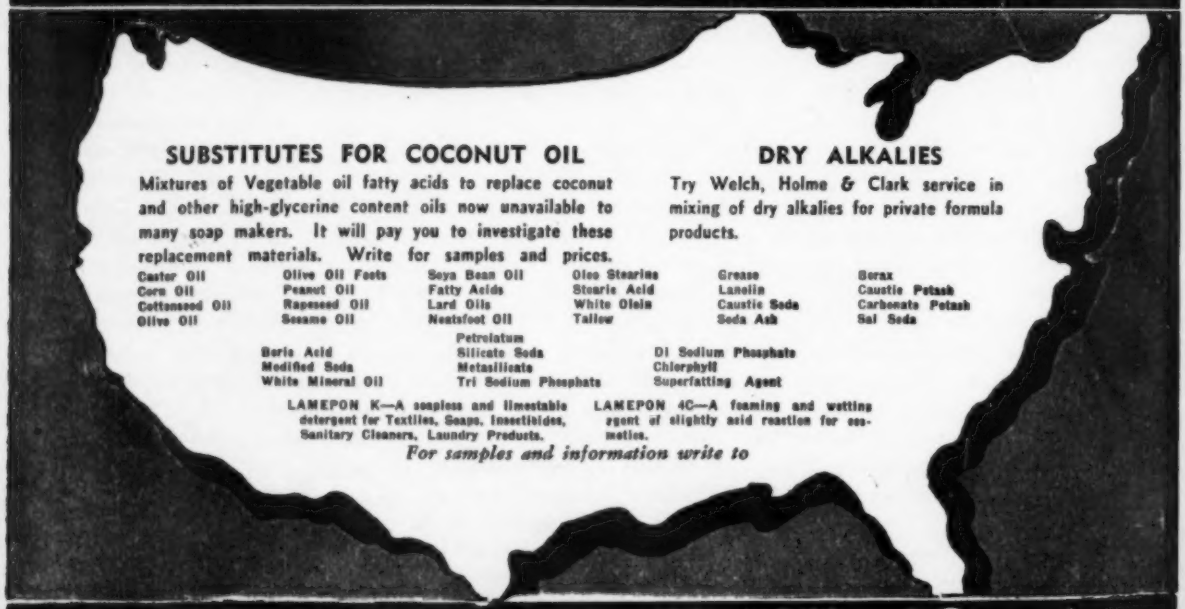

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PRICES

(As of November 27, 1943)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .08½	$ .09
Acid, Boric, bbls., 99½%	ton	109.00	126.00
Cresylic, drums	gal.	.81	.83
Low boiling grade	gal.	.81	.83
Muriatic, C. P., carboys	lb.	.06½	—
Oxalic, bbls.	lb.	.11¼	.12½
Alcohol, Ethyl, drums	gal.	11.94½	11.98
Complete Denat., SDI, dms., ex.	gal.	.62	.64
Alum. Potash lump, bbls.	lb.	.04½	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., drums	lb.	.08½	.09¼
Bentonite	ton	11.00	16.00
Bleaching Powder, drums	100 lb.	2.50	3.60
Borax, pd., bbls., bags	ton	45.00	71.00
Carbon Tetrachloride, car lots	gal.	.60	1.17
L. C. L.	gal.	.80	1.27
Cresol, U.S.P., drums	lb.	.10¾	.11¼
Cresote Oil	gal.	.15½	—
Feldspar, works	ton	14.00	20.50
Formaldehyde, bbls.	lb.	.05½	.06¼
Fullers Earth	ton	8.50	15.00
Glycerine, C.P., drums	lb.	.18¾	.19¼
Dynamite, drums	lb.	.18¼	.18¾
Saponification, drums	lb.	.12¾	.14¾
Soap lye, drums	lb.	.11½	—
Lanolin, U.S.P., hydrous, drums	lb.	.32½	.34
Anhydrous, drums	lb.	.34	.35½
Lime, live, bbls.	ton	6.25	16.00
Mercury Bichloride, drums	lb.	2.34	2.39
Naphthalene, ref. flakes, bbls.	lb.	.08	.08¼
Orthodichlorbenzene	lb.	.07	.08
Paradichlorbenzene, drums	lb.	.11	.15
Petrolatum, bbls. (as to color)	lb.	.021	.08
Phenol (Carbolic Acid) drums	lb.	.10	.11¾
Pine Oil, drums	gal.	.30	.33
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03	.03½
Potassium Carbonate, solid	lb.	.06¼	.06¾
Liquid	lb.	.05½	.05¾
Pumice Stone, coarse	lb.	.03⅝	.04¼
Rosins (net wt., ex dock, New York)—			
Grade D to H	100 lb.	4.40	4.66
Grade I to N	100 lb.	4.74	5.03
Grade WG to X	100 lb.	6.65	6.90
Rotten Stone, dom., bags	lb.	.0128	.019
Silica	ton	17.00	38.00
Soaps—			
Tallow Chip, 88%	lb.	.11	.11⅝
Powder, 92%	lb.	.11⅝	.12
Powdered, White Neutral	lb.	.25½	.42
Olive Oil Paste	lb.	.40	—
Shampoo Base	lb.	.18	.20
Liquid Concentrate, 30-32%	gal.	.75	.79
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.15	3.25
Car lots, in bulk	100 lb.	.90	.95
Soda, Caustic, cont., wks. solid	100 lb.	2.30	3.55
Flake	100 lb.	2.70	5.70
Liquid, tanks, 47-49%	100 lb.	1.92½	1.95
Soda Sal., bbls.	100 lb.	1.20	1.40
Sodium Chloride (Salt)	ton	14.20	18.00
Sodium Fluoride, bbls.	lb.	.07	.08
Sodium Bisulfate	100 lb.	2.20	2.40
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.28	6.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.27½	.33½
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	6.00	6.70

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.1110	Nom.
Castor, No. 1, bbls.	lb.	.1300	—
No. 3, bbls.	lb.	.1380	—
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.128	—
Tanks, Pacific Coast, futures	lb.	No Prices	
Copra, bulk, coast	lb.	No Prices	
Corn, tanks, West	lb.	.12¾	—
Cottonseed, crude, tanks, mill	lb.	.12¾	—
PSY, futures	lb.	.14	—
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.18	.18½
Cotton Oil, tanks, Chicago	lb.	.13½	—
Settled soap stock, Chicago	lb.	.03⅞	.04
Boiled soap stock, 65%, Chi.	lb.	.04⅞	.05
Foots, 50%, Chicago	lb.	.03½	.03¾
Castor Oil, split, tanks, N. Y.	lb.	.20¾	.21¼
Linseed Oil, split, tanks, N. Y.	lb.	.1530	—
Distilled	lb.	.21½	.22
Myristic acid, distilled, tanks, N.Y.	lb.	.19	.19½
Palm Oil, white tanks, N. Y.	lb.	No Prices	
Single distilled	lb.	No Prices	
Soybean Oil, split, tanks, N. Y.	lb.	.1175	—
Distilled	lb.	.1390	.1400
Red Oils, bbls., dist. or sapon	lb.	.1325	.1425
Tanks	lb.	.12½	—
Stearic Acid, saponif.			
Double pressed	lb.	.15⅞	.16⅞
Triple pressed	lb.	.18⅝	.19⅝
Greases, choice white, tanks	lb.	.08⅞	—
Yellow	lb.	.08¼	—
Lard, city, tubs	lb.	.1400	—
Linseed, raw, bbl.	lb.	.1530	—
Tanks, raw	lb.	.1490	—
Olive, denatured, bbls., N. Y.	gal.	4.10	4.20
Foots, bbls., N. Y.	lb.	No Prices	
Palm, Sumatra, cif. New York, tanks	lb.	No Prices	
African, tanks, ex. ship	lb.	.08¼	Nom.
Palm, kernel	lb.	No Prices	
Peanut, crude, tanks, mill	lb.	.13	Nom.
Soya Bean, domestic, tanks, crude	lb.	.11¾	Nom.
Stearin, oleo, bbls.	lb.	.1050	—
Tallow, special, f.o.b. N. Y.	lb.	.08½	—
City, ex. loose, f.o.b. N. Y.	lb.	.08⅝	—
Teaseed Oil, crude	lb.	.29	Nom.

Guns and Tanks Will Be SOAP MACHINES Again One Day

THE pendulum will swing. The metal that normally would have made a soap plodder or mill has been converted into a gun or tank. But the day will come again — soon — when the guns and tanks will be changed back to machines to provide the things of a fuller, better life.

On that day LEHMANN machines will again give notable help to the Soap Industry by providing unexcelled efficiency in the production of soap products. They will again be the best machines that scientific designing and expert workmanship can produce.

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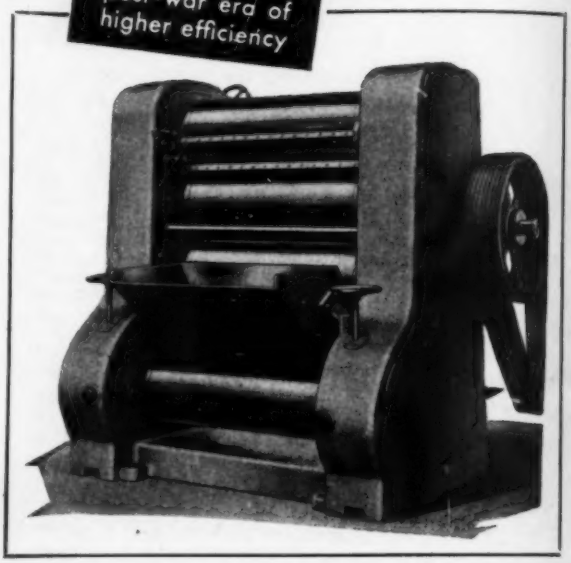

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(As of November 29, 1943)

Essential Oils

Almond, Bitter, Artificial	lb.	$ .85	$ .98
Bitter, F.F.P.A.	lb.	5.25	5.50
Sweet, cans	lb.	1.85	2.50
Anise, cans, U.S.P.	lb.	3.50	3.85
Bay, 55-60% phenols, cans	lb.	1.60	1.90
Bergamot, coppers, S.A.	lb.	8.25	—
Artificial	lb.	2.25	4.50
Birch Tar, rect., cans	lb.	3.00	3.25
Crude, cans	lb.	2.00	2.25
Bois de Rose, Brazilian	lb.	4.75	5.00
Cayenne	lb.	—	—
Cade (juniper tar), drums	lb.	1.35	1.50
Cajeput, tech., drums	lb.	1.75	2.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	.60	.65
White, drums	lb.	8.50	—
Cananga, native, cans	lb.	8.10	8.50
Rectified, cans	lb.	8.90	11.00
Cassia, Redistilled, U.S.P.	lb.	10.50	12.50
Cedar Leaf, cans	lb.	1.10	1.45
Cedar Wood, light, drums	lb.	.55	.60
Citronella, Java, drums	lb.	2.50	2.80
Citronella, Ceylon, drums	lb.	.90	1.05
Clove, U.S.P., cans	lb.	1.65	1.73
Eucalyptus, Austl., U.S.P., cans	lb.	1.20	1.25
Fennel, sweet, cans	lb.	2.70	3.00
Geranium, African, cans	lb.	13.00	16.00
Bourbon, cans	lb.	13.00	15.00
Turkish (Palmarosa)	lb.	4.10	6.00
Hemlock, cans	lb.	1.25	1.45
Lavender, 30-32% ester, cans	lb.	9.00	9.25
Spike, Spanish, cans	lb.	3.60	4.75
Lemon, Ital., U.S.P.	lb.	—	Nom.
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	1.00	1.30
Linaloe, Mex., cases	lb.	2.90	—
Nutmeg, U.S.P., cans	lb.	5.25	7.00
Orange, Sweet, W. Ind., cans	lb.	4.00	5.00
Italian cop	lb.	—	—
Distilled	lb.	.75	.78
California, expressed	lb.	1.00	1.50
Origanum, cans, tech.	lb.	2.85	3.25
Patchouli	lb.	6.60	8.50
Pennyroyal, dom.	lb.	—	—
Imported	lb.	3.00	3.25
Peppermint, nat., cans	lb.	6.00	—
Redis., U.S.P., cans	lb.	6.35	—
Petitgrain, S. A., cans	lb.	1.50	1.85
Pine Needle, Siberian	lb.	3.25	3.50
Rosemary, Spanish, cans	lb.	2.00	2.20
drums	lb.	1.50	1.65
Sandalwood, dom., dist., U.S.P.	lb.	6.25	—
Sassafras, U.S.P.	lb.	1.90	2.35
Artificial, drums	lb.	1.25	1.40
Spearmint, U.S.P.	lb.	4.00	—
Thyme, red, N.F.	lb.	2.50	3.25
White, N.F.	lb.	2.65	4.00
Vetiver, Java	lb.	25.00	28.50
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

Acetophenone, C. P.	lb.	$ 1.55	$ 1.60
Amyl Cinnamic Aldehyde	lb.	—	—
Anethol	lb.	2.03	2.25
Benzaldehyde, tech.	lb.	.45	.55
N. F. VI	lb.	.85	.98
Benzyl, Acetate	lb.	.60	Nom.
Alcohol	lb.	.68	.75
Citral	lb.	3.20	5.00
Citronellal	lb.	2.75	3.25
Citronellol	lb.	6.00	7.00
Citronellyl Acetate	lb.	—	—
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.63	—
Eucalyptol, U.S.P.	lb.	2.85	3.25
Eugenol, U.S.P.	lb.	2.50	3.05
Geraniol, Soap	lb.	2.50	3.00
Other grades	lb.	3.50	4.00
Geranyl Acetate	lb.	—	—
Heliotropin	lb.	3.35	3.50
Hydroxycitronellal	lb.	8.75	9.00
Indol, C. P.	lb.	26.00	27.50
Ionone	lb.	3.20	5.65
Isoborneol	lb.	.81	.90
Iso-boryl acetate	lb.	.89	1.00
Iso-Eugenol	lb.	3.90	—
Linolool	lb.	6.60	8.00
Linalyl Acetate	lb.	5.50	7.25
Menthol, natural	lb.	—	—
Synthetic, U.S.P.	lb.	13.00	19.00
Methyl Acetophenone	lb.	—	—
Anthranilate	lb.	2.20	2.50
Paracresol	lb.	—	—
Salicylate, U.S.P.	lb.	.40	.92
Musk Ambrette	lb.	12.50	14.00
Ketone	lb.	10.50	14.00
Xylol	lb.	1.40	2.90
Phenylacetaldehyde	lb.	2.60	3.00
Phenylacetic Acid	lb.	1.60	1.80
Phenylethyl Alcohol	lb.	2.38	2.75
Rhodinol	lb.	20.00	—
Safrol	lb.	1.80	2.00
Terpineol, C.P., dra.	lb.	.37	—
Cans	lb.	.42	—
Terpinyl Acetate, 25 lb. cans	lb.	.65	—
Thymol, U.S.P.	lb.	2.60	Nom.
Vanilin, U.S.P.	lb.	2.60	2.90
Yara Yara	lb.	1.83	2.00

Insecticide Materials

Insect Powder, bbls.	lb.	.29	.30
Pyrethrum Extract			
20 to 1	gal.	5.90	6.00
30 to 1	gal.	8.85	9.00
Derris, powder—4%	lb.	.31	—
Derris, powder—5%	lb.	.35	—
Cube, powder—4%	lb.	.31	—
Cube, powder—5%	lb.	.35	—
Squill, red, dried	lb.	.85	.88

Waxes

Bees, white	lb.	.57	.63
African, bgs.	lb.	.3750	—
Refined, yel.	lb.	.5250	.6050
Candelilla, bgs. (crude)	lb.	.38	—
Carnauba No. 1, yellow	lb.	.8325	.8925
No. 2, N. C.	lb.	.7575	.8175
No. 3, Chalky	lb.	.7125	.7725
Ceresin, yellow	lb.	.13½	.18
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0520	.0560

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Manufacture of Extruded Soap

MILLED soaps usually contain a high proportion of a readily soluble soap phase known as "beta" soap. This phase is distinguishable by x-ray analysis. Similarly distinguishable is a less readily soluble solid phase, referred to as the "omega" phase, which is formed when soap is rapidly cooled from a molten to a solid state without mechanical working. The omega soap phase is also formed when soap of appropriate composition and reduced moisture content is aerated while being agitated in the neat condition and thereafter cooled without further agitation.

Of two soap bars of the same chemical composition, water content, and general granular structure, that bar which contains the greater ratio of beta-phase soap to omega-phase soap will develop suds the more rapidly when rubbed during use.

Framed kettle soap may contain soap in the beta phase, but usually in relatively smaller proportion than in milled soap. There is no beta phase present in this soap when it is dropped from the crutcher into the frame; any beta phase which may be present in the final product forms spontaneously during cooling in the frame and in the absence of agitation.

Although milled soaps usually contain a high proportion of the desirable beta phase, they possess disadvantages in that they do not lend themselves to aeration, they require heavy-duty equipment, and they tend to be translucent unless an opacifying agent such as a solid white powdered material, is incorporated during manufacture.

In British Patent No. 555,034, the Procter & Gamble Company explains these principles and how to manufacture an extruded bar soap containing a substantial proportion of the beta phase, and having a higher sudsing rate than ordinary framed soap of identical chemical composition.

By working a soap while it is being cooled from a fluid or molten state through varying degrees of plasticity, beta-phase soap is formed. The final temperature of the soap leaving the agitating operation must be below a critical value which varies with the composition of the soap and its moisture content, but above a limit at which the soap loses its pasty cohesiveness. A product so formed is softer, less tough, and less translucent than milled soap of like formula.

The critical temperature is the highest temperature at which a rapidly cooled sample of the extruded soap just exhibits the characteristic beta ring in an x-ray diffraction photograph. A more readily available means of approximating the critical temperature is to compare sudsing rates of soap samples representing different extrusion temperatures with the sudsing rate of a sample of kettle soap of the same composition but slowly cooled from a fluid to a solid state as in commercial framing practice. The lower temperature limit is readily recognized on the gradual lowering of the extrusion temperature, as that point below which an aerated soap of any given formula begins to become crumbly and noncohesive.

The apparatus for this treatment is described and illustrated diagrammatically. The apparatus provides for the introduction of compressed air or inert gas if desired.

The improved soap is more opaque than milled soap. The relative opacity of soap may be conveniently measured by cutting a section one-sixteenth of an inch thick from a sample, and determining by means of a reflectometer the amount of light reflected under standardized background, first when the film is placed on a perfectly black background, and second when the film is placed on a white background. The first reading multiplied by 100 and divided by the second reading is called the opacity value of the soap. This test is similar to that used in determining the opacity of paper.

A typical sample of soap made by the new method, except that the step of injecting gas was omitted, had an opacity value of 89, when

measured on a surface that is substantially parallel with the direction of extrusion of the soap. Milled soap of the same formula and the same moisture content but with no opacifying agent added, and having the same beta-soap content as the new soap, had an opacity value of only 70. Unaerated framed soap of the same formula and the same moisture content had an opacity value of 84.

Under comparable conditions as to bar size, bar temperature, age of bars, etc., the improved soap is found to be softer than ordinary milled soap of the same formula. The difference in firmness between the two types of soap depends on the moisture content and the extrusion temperature of the soap. The superior sudsing ability of extruded bar soap is due in some measure to its granular structure, which includes among other things the softness of the product for a given chemical and phase composition. *Perfumery & Essen. Oil Record* 34, 259-61 (1943).

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Wrong Snell Credited

In the November issue of *Soap & Sanitary Chemicals*, page 63, we erroneously credited Cornelia T. Snell as being one of four authors of the paper "Effect of NaOH on Dissolved Soap." Instead, Chester A. Snell, brother of Foster D. Snell, should have been listed as the fourth author. The other three included: Benjamin P. Caldwell, Foster D. Snell and L. C. Cartwright. The story was an abstract of a paper presented before the American Oil Chemists Society in Chicago, Oct. 6, 7, and 8.

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A. D. Rich Joins Filtrol

A. D. Rich, formerly with Armour & Co., Chicago, is now directing the sales activities of Filtrol Corp., makers of oil bleaching and purifying materials, Los Angeles, for the vegetable, marine and animal oil fields. Mr. Rich served as an analytical chemist for Armour, and for eleven years was in charge of their Control laboratory. A graduate in chemical engineering from the University of Illinois, he is an active member of the American Oil Chemists Society, of the Institute of American Food Technologists, and the American Chemical Society.

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Soap in Metal Fabrication

Soap is playing a large part in the metal fabricating industries engaged in producing the tools of war, according to the Association of American Soap & Glycerine Producers, Inc. Reporting on a survey of such uses, Roscoe C. Edlund, manager of the Association, says in a bulletin entitled "Soap In Lubricants Speeds Up War Production," that "most of the metal that is fabricated for war utilizes our product at some stage in its manufacture." The bulletin describes the use of soap as a lubricant in production of shells and cartridge cases, barbed wire, cables, springs and cold-drawn bars, wires and blanks of every kind. Soap, Mr. Edlund also reveals, is a vital component of a large number of new greases with which technicians are meeting new problems in production of such things as valves and pumps, also in high speed cutting oils and airplane lubricants.

Methyl Cellulose in Soap

The successful use of methyl cellulose in soap depends to some extent on the choice of a suitable grade of the material. High-viscosity methyl cellulose is the most economical and the most suitable. It possesses a relatively high viscosity in low concentrations. A 6 per cent solution of high-viscosity material yields a smooth solution which flows at 20°C., while a low-viscosity methyl cellulose might have to be used at a concentration of as much as 15 per cent.

In liquid shampoos methyl cellulose both thickens the solution and improves lathering ability without causing clouding or gumming. The inclusion of a small proportion of wetting agent in the solution of methyl cellulose before admixture with the shampoo is recommended. The solution is prepared by wetting the methyl cellulose with half the quantity of water to be used, having this portion of water at the boiling point. After solution, the other half of the water—or solution of wetting agent—is added cold. Paul I. Smith. *Am. Perfumer* 45, No. 10, 61-2 (1943).

New Light Fastness Standards

A new set of dye standards for fastness to light has recently been developed by the Committee on Fastness to Light of Dyed Textiles of the American Association of Textile Chemists and Colorists. A feature of these new standards is their extreme fastness to washing. This fact makes them suitable for weather or roof tests, since subsequent scouring to remove soot or dirt is said to have no effect on the results. The new standards have been exposed to sunlight under glass, weather and the Fade-Ometer. They were measured spectrophotometrically and found to be more satisfactory than the present A.A.T.C.C. standards. The new light fastness standards represent a new idea in that only two dyes are used to produce the range of 10, 20, 40, 80 and 160 hours fastness to the Fade-Ometer (FDA model). One fugitive dye, Erio Chrome Azurole B (Color Index No. 720), which is made by several American dye manufacturers, and one extremely fast dye, Indigosol Blue AGG, Carbic Color & Chemical Co., or Algosol Blue AGG, General Dyestuff Corp., were blended in varying proportions to obtain the desired fading characteristics. The blending was done with dyed "slubbing," that is, each dye was applied to wool "slubbing" separately and then the two were blended mechanically. By this means any desired degree of fastness can be obtained merely by using the proper proportions of each of the dyed materials.

The new standards were adopted as tentative by the Research Committee of the A.T.T.C.C. at their recent meeting in New York, to replace the present standards. Authorization was granted to go ahead and prepare a substantial quantity of the new standards for distribution to the trade. It is expected the new standards will be incorporated into Commercial Standard CS59-43 and also be accepted by other interested groups.

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U.S.I. CHEMICAL NEWS

December ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1943

Diethyl Oxalate Supplements Scarce Lacquer Solvents

Reagent Uses Also Afford Many Possibilities in Synthesis

Although in the past diethyl oxalate has found its greatest use in organic synthesis, it is today being employed in substantial quantities to replace and extend critically short nitrocellulose solvents.

Diethyl oxalate is an excellent solvent for nitrocellulose and has a slow evaporation rate. While its applications have previously been limited to specialized fields, due to its tendency to hydrolize, it is now being used very successfully where special care is taken to eliminate all possible water from the formulation. It is recommended that wherever possible diluents with high aromatic content be used inasmuch as diethyl oxalate has a much higher dilution ratio with aromatic hydrocarbon diluents than it has with petroleum naphthas.

Diethyl oxalate offers many possibilities in chemical synthesis. Here are a few typical examples:

1. With ethyl acetate in the presence of sodium ethoxide (sodium ethylate) it yields ethyl sodium oxalacetate.

2. With acetone in the presence of sodium ethoxide, it yields xanthochelidonic acid ester (acetone dioxalic ester) from which the ethyl ester of chelidonic acid may be obtained. Gamma-pyrone may in turn be obtained from this latter substance.

3. With zinc and alkyl iodides, it gives ethyl esters of dialkylglycolic acid.

4. With sodium amalgam, the alcoholate of ethyl glyoxylate, ethyl oxomalonate, ethyl racemate, and the ethyl ester of desoxalic acid may be obtained. From this latter acid there may be obtained by reacting with phenylhydrazine, the phenylhydrazone of ethyl glyoxylate.

5. Electrolytic reduction gives ethyl glyoxylate.

6. With sodium ethoxide and urea, it gives parabanic acid (oxalylurea).

7. It is used to manufacture phenobarbital.

8. With ortho-nitrotoluene there results an alcohol condensation product containing a third group in the benzene ring.

9. By distilling with an alcohol other than ethanol the oxalic ester of the alcohol may be obtained through alcoholysis.

Patents New Protective Treatment for Textiles

A Canadian Patent has been granted covering the use of trichlorobenzyl phenyl ether dissolved in alcohol or acetone as a mothproofing agent for textiles. It is mixed with salicylanilide as a fungicide or with pyrethrum as an insecticide.

New Anti-Rust Compound Is Announced by U.S.I.

Extensive Use in Automotive and Industrial Cooling Systems Seen for New Powder

Improved protection for radiators and other cooling-system surfaces is made possible by a new anti-rust compound in powder form, recently developed by U.S.I. Orange in color, the powder works equally well with water or any type of anti-freeze solution. Two ounces will protect a five-gallon capacity automobile cooling system.

Use of an inhibitor of this type in automobile cooling systems is particularly advisable this winter where anti-freeze solutions are being re-used, as the rust-inhibiting qualities originally present in the anti-freeze will have been lost.

Summer Use Important

In addition to imparting anti-corrosive properties to alcohol or permanent type anti-freeze solutions, the compound is recommended for use for summer radiator protection. Recent reports by government agencies and automotive engineering groups indicate that radiator corrosion is at its peak during the summer, due to the higher temperatures and the fact that ordinary water is so generally used as a coolant.

Protects Many Metals

Extensive tests in U.S.I. laboratories have shown that the new inhibitor will protect surfaces of a wide range of metals, including aluminum, steel, cast iron, copper, brass and solder. By keeping heat transfer surfaces clean, the product helps assure efficient cooling, thus preventing engine overheating and loss of anti-freeze from boil-over.

U.S.I.'s new compound has no effect on rubber, and therefore cannot cause trouble with radiator hoses or other rubber appliances in the cooling system. It is also entirely odorless.

Tests Possible Solvents For Tung Oil Extraction

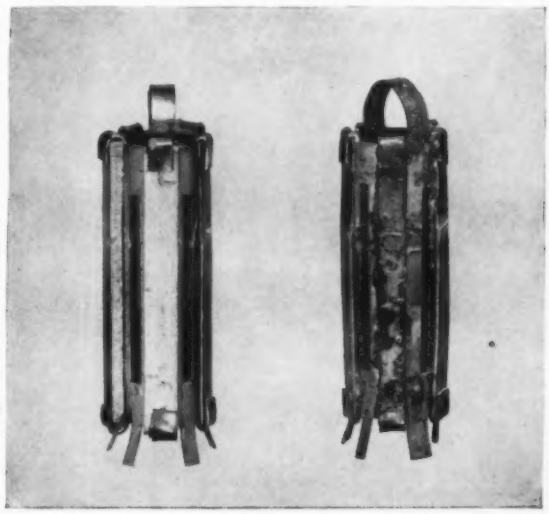
Renewed interest in the possibility of increasing the yield of tung oil from domestic fruits is reflected in a recent study of solvents which might be used in an extraction process. Out of a total of 33 solvents studied, ethyl acetate and some 10 others held the most promise, from the standpoints of quality and yield of tung oil produced and from that of economics.

The study, carried on by three Department of Agriculture scientists, points out the necessity of selecting a solvent of sufficiently high boiling point to avoid excessive vapor losses, yet low enough to prevent deterioration of the tung oil quality through exposure to unduly high temperatures.

Alkyd Resin Can Replace Phenolics in Navy Primer

The Navy Department has announced that it will now accept, tentatively, a primer based on Holabird Specification ES-680a, Class 101 for use on all Naval equipment and machinery. This is covered by Specification 52-P-26 Primer, Metal (Brown) dated June 1, 1943, and will replace the original Zinc Chromate Primer 52-P-18 (phenolic) which will be used only for the painting of ships' hulls and com-

(Continued on next page)



Unretouched photo of test bundles just as they appeared after an accelerated corrosion test simulating the most severe conditions encountered in automotive radiators. Bundles consist of strips of copper, aluminum, solder, brass, and cast iron, all crimped with good electrical contact to a steel frame. Note the corrosion and severe electrolysis which has taken place on the "control" bundle at right, which was exposed to untreated tap water. Note how clean and free from electrolysis the bundle at left is after exposure to similar tap water which had been protected with U.S.I.'s new anti-rust compound.

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December ★ **U.S.I. CHEMICAL NEWS** ★ 1943

Resins in Navy Primer

(Continued from preceding page)

partments. Until such time as the Navy can evaluate submitted samples of Specification 52-P-26 and can establish an approved list, those products now having the approval of Holabird Quartermasters Depot will be accepted by them.

Specification 52-P-26 is met completely by Aroplaz 1323-D, a product of U.S.I.'s Stroock & Wittenberg Division, which is already being used extensively in Holabird Specification ES-680a. Although this is one of the lowest priced pure alkyd resins, it is a versatile high-quality product.

Recovery of Free Acid From Pickling Liquors

Acetone has been found superior to solvents previously tried for promoting the crystallization of copperas from pickling liquor. While acetone is not satisfactory for the treatment of continuous-process liquor, batch liquor responds well from the standpoints of ferrous sulfate removal, acid concentration, quality of copperas, and acetone separation.

Reports New Remedy For Skin Ailments

Tetraethylthiuram monosulfide is reported by a British Journal to have proved effective in the treatment of scabies. The liquid preparation used was an emulsifiable oil having the composition:

Tetraethylthiuram monosulfide	25%
Polyglycerol ricinoleate	10%
Industrial methylated alcohol	65%

One part of this oil was added to four parts of water immediately before use.

Influence of Alcohols On Indicators Described

Color change of some titration indicators is reported to be markedly influenced by the lower alcohols.

The change is least pronounced with ethyl and *n*-propyl alcohol, more so with methyl, and most pronounced with iso-propyl alcohol. Impurities in the alcohol also have an appreciable effect, impossible values being obtained in the presence of ethers.

Method for Determining Chlorophyll and Carotene

Of significance to the dehydrated food and other industries is a recently announced method of determining chlorophyll, pheophytin, xanthophyll and carotene — key factors in the taste and nutritional "goodness" of vegetables.

The method involves a combination chromatographic, solvents-partition, and spectrophotometric techniques. Pigment is first extracted with acetone, then transferred to ether and subjected to direct spectrophotometric analysis for chlorophyll and henophytin. Xanthophyll and carotene are subsequently determined by chromatographic analysis.

Molasses Extender

Demand for Special Liquid Curbay as an extender for molasses in hog and dairy feed manufacture continues to grow. This U.S.I. product is also finding increased industrial use as a binder, and is said to offer interesting possibilities in the preparation of specialty agricultural products for plants and soils.

Special Liquid Curbay contains approximately 40-45% solids, can be handled just like molasses in storage or mixing equipment, and is available in tank car quantities without allocation limitations.

Determination of Water In High-Proof Ethanol

A mixture of anhydrous ethanol and bicyclohexyl exhibits a critical solution temperature of 23.4°C.; with 1 per cent of water present, this temperature becomes 41.4°, and with 2 per cent water 54.1°. Thus the critical solution temperature can be plotted against the percentage of water present and the resulting curve used for determining the water content of high-proof alcohol.

The procedure recommended is to add 4.0 ml. of bicyclohexyl to 2.0 ml. of the alcohol to be tested and stir with a dry thermometer. Heat until the solution becomes clear and then cool slowly with stirring. Note the temperature at which the mixture becomes slightly opalescent.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Two new fatty acids, azelaic and pelargonic, described as straight chain acids containing nine carbon atoms are announced. Now in commercial production, these acids suggest new fields for investigation in textile applications, modifications of resins, plasticizers, etc. **(No. 749)**

U S I

A paint brush cleaner is offered which the maker claims will swell the bristles and loosen dried paint in 12 to 96 hours. The liquid is non-inflammable, non-fuming and harmless to the hands. It can be re-used after straining. **(No. 750)**

U S I

Low freezing points and mild odors are the featured points of a new series of plasticizers and softeners now being offered for use in coatings, adhesives, plastics, synthetic resins and rubbers, etc. A chart of the physical properties of these new products is available from the maker. **(No. 751)**

U S I

A quick-setting, tacky adhesive, developed primarily to cement cork inserts in reconditioned or new crowns, is reported to work especially well in automatic cork inserting machines. The maker states the product is odorless and non-toxic. **(No. 752)**

U S I

Preventing electrolysis and consequent boiler corrosion is the purpose of a new galvanic cell designed to hang from a tube in the boiler. The cell, it is stated, concentrates electrolytic action at its negative pole, precipitating the mineral matter for removal during blowdown. **(No. 753)**

U S I

A new plasticizer, claimed to impart striking low temperature flexibility to synthetic rubber products, is being offered to processors of Butaprene, Chemigum, Hycar, Neoprene, Perbunan and Thiokol. **(No. 754)**

U S I

A new floor cleaner, recommended also as an oil and grease absorbent for reducing fire and slipping hazards, is announced. Said to be non-abrasive, odorless, and non-injurious to skin, clothing or flooring, the product will absorb up to 50% of its weight of oil or grease. **(No. 755)**

U S I

Stable, uniform oil emulsions are said to be produced at higher speed with the aid of a new group of soluble resinates. Sodium and potassium salts of selected resins, these resinates are useful in the manufacture of cutting oils, polishes, paints, and many other products. **(No. 756)**

U S I

A new gas mask, approved for use in the presence of acid gases, organic vapors, ammonia, carbon monoxide and toxic smokes, where sufficient oxygen is present to support life, is announced. Shatter-proof lenses, an arrangement to prevent lens-fogging, and a dial which indicates safe remaining service time are incorporated in the design. **(No. 757)**

U S I

A new paint remover is reported to cut through the toughest film, leaving a clean, neutral surface that requires no after-washing or neutralizing. The product is said to be waxless, involve a minimum of fire and toxic hazards. **(No. 758)**

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Comparison of Soap Builders

SOAP solutions containing different builders have been compared in standard washing tests with respect to the effects of the builders on detergent action and whiteness retention. At a soap concentration of 0.1 per cent and a soap to builder ratio of 2 to 1, the soap builders studied may be classified in descending order of detergent efficiency as follows: Proprietary builder 3, sodium hydroxide, proprietary builder 2, proprietary builder 1, sodium metasilicate, sodium carbonate, trisodium phosphate, modified soda, sodium bicarbonate.

Proprietary builder 1 was composed of silicates high in alkali content, sodium carbonate, and tetrasodium pyrophosphate. Proprietary builder 2 was a complex mixture of somewhat less alkaline silicates, sodium carbonate, and small amounts of other ingredients. Proprietary builder 3 was largely composed of silicates higher in alkali than the first product, tetrasodium pyrophosphate, and moderate amounts of organic materials. Equivalent detergent action may be obtained with builders both high and low in detergent action by suitably adjusting the ratio of soap to builder.

At a soap concentration of 0.1 per cent and a soap to builder ratio of 1 to 1, the builders studied may be classified in decreasing order of effectiveness in whiteness retention as follows: proprietary builder 2, proprietary builder 1, modified soda, sodium bicarbonate, trisodium phosphate, sodium metasilicate, proprietary builder 3, sodium carbonate, sodium hydroxide.

In each of these classifications some of the builders studied are quite close together. In the formulation of proprietary builders, not only should soil removal be considered but also soil deposition, and a proper balance should be obtained. In this work detergency is expressed in terms of soil removal. Besides soil removal and whiteness retention, other properties such as water softening and rinsibility must be considered when comparing the over-all efficiency of laundry builders. T. H. Vaughn and A. Vittone, Jr. *Ind. Eng. Chem.* 35, 1094-98 (1943).

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Soap Phase Studies

Fiber as well as x-ray powder diffraction photographs of sodium laurate, palmitate and stearate yield information leading to the following general conclusions. All crystals of soap consist of layers of double molecules placed end to end, hydrocarbon to hydrocarbon and carboxyl group to carboxyl group.

As a first approximation *c* is the double length of the molecule, *b* is twice the width of the molecule in the plane of the hydrocarbon zig-zag chain. The different crystalline forms differ chiefly in the angle of tilt of the molecule, and in minor details of close packing in the *a* and *b* directions. Water lengthens the spacing, presumably by entering among and between the polar heads. If the successive layers of double molecules do not fit exactly end to end but are staggered alternately, the unit cell naturally has to be doubled. James W. McBain, O.E.A. Bolduan and Sydney Ross. *J. Am. Chem. Soc.* 65, 1873-6 (1943).

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Soap Cure for Hay Fever

An unusual application of soap is its use in the treatment of hay fever. Twelve hay-fever patients were cured of their symptoms by spraying nasally and dropping into the eyes a simple solution of sodium oleate dissolved in 10,000 parts of water. A momentary smarting was produced, but two treatments a day are said to have resulted in definite improvement within four days in even the most severe cases. Med. Bull. Veterans' Admin. 14, 216.

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Oil Stain Removal

Oxidized oil stains may be very difficult to remove, but are sometimes treated satisfactorily as follows: Mix equal parts by volume of carbon tetrachloride, oleic acid, denatured alcohol, and amyl acetate. Apply to the stain and work in well with a brush or a bone spatula. Let stand 15-20 minutes. Flush out with Stoddard solvent. Repeat the treatment if the stain is not completely removed. If after such treatments there is no noticeable improvement, the stain has become permanently set and cannot be removed safely. C. H. Bayley. *Laundry & Dry Cleaning J. of Canada* 23, No. 10, 14 (1943).

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Unsaturation Method

Tetranitromethane reacts with unsaturated fats and fatty acids dissolved in chloroform or carbon tetrachloride, to yield a yellow to dark red color depending on the amount of unsaturation. When read with a Pulfrich photometer the intensity of the color rose with the iodine number of the test sample. Iodine numbers determined by this method checked within 5 per cent of those determined bromometrically. H. P. Kaufmann, B. W. King and L. Huang. Ber. 75B, 1201-14.

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Soap in Shell Making

Manufacturers of brass goods, now almost entirely converted to making war materials, state that soap is indispensable in manufacturing shell and cartridge cases. The cases are sprayed or dipped in a soap solution after which they emerge with a thin film of dry soap on the surface. This soap film lubricates the cases as they pass through the die in the following drawing operation. Wet soap solutions are also used in some cases. In certain wire drawing operations the wire passes through a bed of dry soap powder and picks up enough soap to lubricate it when passing through the die. Bull. Assoc. Am. Soap & Glycerine Producers, October, 1943.

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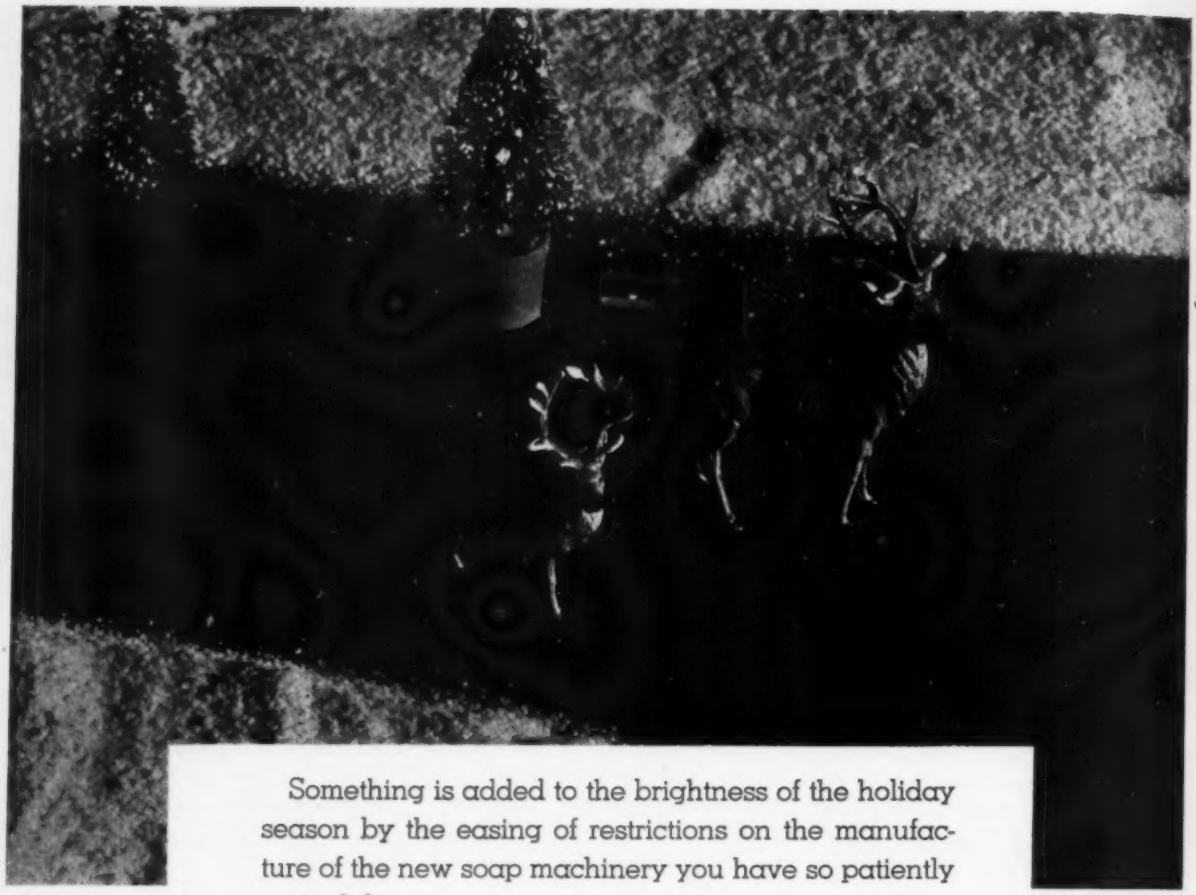
Fat Splitting

Fats and oils are hydrolyzed in emulsified form in a flowing stream in a reaction coil of corrosion-resistant metal at 260-340° C. and under a pressure of 3000-3500 pounds per square inch. The coil is heated by a eutectic mixture of biphenyl and di-



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phenyl oxide, and contains solid spaced metal choke rods and devices to facilitate mixing and heating of the liquid materials, and to lessen the formation of scale in the pipe. G. W. Eisenlohr, to The M. Werk Co. U. S. Patent No. 2,318,206.

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Mildew Removal

Certain types of mildew stains can be removed by the use of a strong hypochlorite bleaching treatment, but this almost invariably results in chemical damage and is not recommended unless the number of stained pieces is too great to be handled by the following treatment:

Immerse the stained portion of the pieces, or the entire piece if staining is general, in a 1 per cent solution of potassium permanganate and allow to stand for 15 minutes. Rinse out excess of the permanganate. The fabric will be found to have become stained a uniform brown color due to the presence of manganese oxide. Prepare a solution of sodium bisulfite containing about 3 ounces to the gallon, and immerse the piece in this solution. This will remove the brown manganese oxide and usually the stains as well. In very badly stained pieces it may be necessary to repeat this process.

With colored pieces, removal of mildew by this method is only possible if the dye is not bleached by permanganate. Canadian Natl. Research Laboratories, Information Bull., October, 1943.

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Synthetic Detergent

Disodium monocetyl monosulfosuccinate, made by the reaction of cetyl alcohol with maleic anhydride and a sulfite, is high in detergent ability. L. H. Flett, to *Allied Chemical & Dye Corp.* U. S. Patent No. 2,316,234.

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X-ray Diffraction by Soap

Fiber photographs of the supercurd, subwaxy, and waxy crystalline phases of sodium laurate and sodium palmitate are described; each is the most stable phase over a definite temperature range. The existence of the transition, curd to supercurd and the reverse, at about 70°C. for sodium laurate is indicated, which conforms to its occurrence already established for the myristate, palmitate, stearate and oleate. O. E. A. Bolduan, J. W. McBain and Sydney Ross. *J. Phys. Chem.* 47, 528-35 (1943).

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Soap Rug Cleaners

The simplest of the rug and upholstery cleaners based on soap is a 1 per cent solution of potash coconut oil soap in water. The soap solution is worked up to a foam with a brush and applied to the cloth or rug. A more efficient cleanser contains 0.6 per cent of potassium stearate soap, 0.6 of trisodium phosphate, 0.5 of 26° Baume ammonia water, 0.6 per cent of green soap and the remainder water. Foam should be worked up first and applied with a brush or sponge. Excess should be removed with a fresh damp towel. *Textile Colorist* 65, 377 (1943).

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Tall Oil Treatment

Tall oil is desulfurized before hydrogenation by filtering a solution of the oil through an adsorbent medium such as fuller's earth or activated charcoal. The filtered oil is heat-treated for 8-10 minutes at 260-325°, then is treated with a compound of a heavy metal such as nickel, copper, lead, etc. at a temperature above 150° to precipitate sulfur compounds of the heavy metal. Such precipitated compounds are readily separated from the oil. A. F. Oliver and R. C. Palmer, to Newport Industries, Inc. U. S. Patent No. 2,317,797.

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Disinfectant Detergents

It has been established that soap impairs the disinfectant power of phenols. In order to find out whether salts of sulfated fatty alcohols behave in the same way, a solution containing a mixture of commercial phenolic compounds was mixed with the sodium salt of sulfated alcohols of varying chain length. Tests were made against *Staphylococcus aureus* and *B. coli commune.*

Sodium octyl sulfate showed no significant impairment of antiseptic power at 0.5 per cent concentration. The higher alkyl sulfates definitely decreased the disinfecting action of the mixed phenol solution. However, the solubilizing action increases with an increase in chain length from sodium octyl- to sodium octadecenyl sulfate. Consequently from the practical viewpoint, disinfectants may well be formulated with a mixture of sodium alkyl sulfates having medium and high chain lengths.

When the influence of potassium soaps was studied in the same way, it was found that potassium caprylate and potassium caprate left antiseptic action unimpaired at concentrations at which potassium oleate almost completely inhibited disinfection. For practical purposes soaps used in phenolic disinfectants should therefore contain the highest possible proportion of soaps from the lower-boiling cuts of distilled fatty acids.

Cation-active compounds have less solubilizing power than anion-active compounds (soaps), but are themselves disinfectant. The quaternary alkyl pyridinium salts are compatible with chlorophenols, and form mixed disinfectant solutions in which neither impairs the antiseptic action of the other. This is significant for practical formulation since the two types are able to supplement each other in blends, which points the way to improvements in the formulation of disinfectant detergents. R. Hueter and H. Engelbrecht. Chemie [8,] 55, 329-31; through Record of Chemical Progress 4, Nos. 3 and 4 (1943).

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Mildew Proofing Agents

In addition to cadmium and copper salts, some of the mildew proofing compounds suggested at different times, and the concentrations used, include the following:

Compound	*% Used*
Benzoic acid	0.05
Cresylic acid	0.1
Dinitrophenol	0.02
Formaldehyde	0.05
Pentachlorophenol	0.014
Phenol	0.13
Salicylanilide	0.025
Phenyl mercuric nitrate	0.01
Ammonium fluoride	0.04
Borax	0.9
Mercuric chloride	0.02
Sodium fluoride	0.8
Sodium silicofluoride	0.15

P.E.N. Cillium. *Textile Colorist* 65, 359-65 (1943).

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PRODUCTS

Abrasive Floor Cleaner

An abrasive material suitable for cleaning floors of garages and similar places, consists of particles of silica coated with an alkali-silicate salt. The material is produced by causing silica to react with caustic soda, an oxide, carbonate or sulfate. The abrasive is also suitable for removing grease and scale from sheet steel or other metals which are being prepared for enameling or painting. Robert F. Ruthruff. U. S. Patent No. 2,318,555.

Nonsoap Washing Agent

A nonsoap washing agent particularly suitable for the washing of cotton fabrics, is prepared by mixing the sodium salt of sulfated fatty alcohols with an alkali pyrophosphate or polyphosphate. The amount of sodium chloride or sodium sulfate present in the washing agent is reduced to less than 10 per cent. Lever Brothers and Unilever Ltd., Richard Thomas and Conrad B. Brown. British Patent No. 547,688.

Dry-cleaning Fluid

A dry-cleaning fluid such as trichloroethylene or carbon tetrachloride is used with an admixture of 0.01-10 per cent of *N-beta*-hydroxy ethyl lauramide or similar compound to give improved detergent power. Such a liquid may be used as a dry-cleaning solvent and in degreasing metals. W. B. Pings, to E. I. du Pont de Nemours & Co. U. S. Patent No. 2,317,112.

Shampoo

Water-soluble salts of sulfuric esters of polyhydric alcohols are esterified simultaneously with soap-forming fatty acids. Deutsche Hydrierwerke A.-G. German Patent No. 725,474.

Borax Soap Bars

Soap is milled with a third as much borax as anhydrous soap, and formed into cakes or bars. R. F. Heald and A. L. Schulerud, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,316,689.

Shampoo Composition

A detergent suitable as a shampoo contains an alkali metal salt of an alkyl ester of sulfoacetic acid in which the alkyl group contains 12-18 carbon atoms. This may be used in varying proportions. As a stabilizing agent an alkali metal salt of an alkyl ester of sulfoacetic acid is present, in which the alkyl group contains no more than 9 carbon atoms. G. C. Toone and L. H. Flett, to Allied Chemical & Dye Corp. U. S. Patent No. 2,316,194.

Mixed Cleaning Agents

Synthetic organic detergents are improved by the addition of metaphosphates. I. G. Farbenind. A.-G. German Patent No. 725,820.

Dry-cleaning Aid

Aryl sulfonates suitable for use as a dry-cleaning aid contain substituents on the nucleus of hydrocarbons derived from a liquid fraction of petroleum, of which at least 80 per cent boils at 195-295°. L. H. Flett, to Allied Chemical & Dye Corp. U. S. Patent No. 2,317,986.

Soap for Surgical Dressings

A waterproofing process for cotton surgical dressings such that they can withstand sterilizing by steam, has been described recently in an Indian medical journal. The cloth is soaked for 24 hours in a saturated aluminum acetate solution, then treated in a steam chamber for three hours. After drying in air it is immersed for one hour in a very hot solution of soap (8 per cent) and glue or a water-soluble gum (2 per cent). The dressing is then rinsed with water, dried in a drying chamber, and finally calendared. Water-repellency is derived from the deposition of aluminum soaps, formed by chemical reaction between the aluminum salt and the soap. Bull. Assoc. Am. Soap & Glycerine Producers, October, 1943.

Washing Sheepskins

Sheepskins are best washed with benzine soap, which is brushed on to them. They are then run through the washing machine for 30-45 minutes and thoroughly rinsed with benzine. Where wet washing has to be resorted to to remove soil completely, many precautions are necessary. Washing and drying both should be done at a temperature not over 70-75° F. *Textile Colorist* 65, 445 (1943).

Automobile Cleaner-Polish

A formula for an automobile cleaner-polish uses a synthetic emulsifying agent, amino methyl propanol:

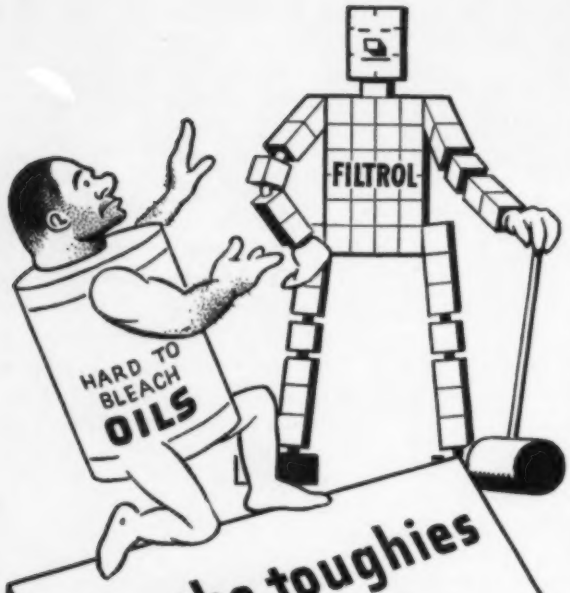
	Parts by weight
Mineral oil (60-80 sec.)	6
Petroleum naphtha (95-150°C.)	6
Oleic acid	2
Carnauba wax	1
Amino methyl propanol	1
Diatomaceous earth	11
Water	73

The first four ingredients are warmed together until the wax is melted. The diatomaceous earth, which serves as a soft, nonscratching abrasive, is stirred into the melt to make a thick paste. The amino methyl propanol is dissolved in water warmed to about 75° C., and the warm solution is vigorously stirred into the paste, preferably with the aid of a colloid mill.

The proportions of diatomaceous earth, mineral oil and naphtha may be varied within a reasonable range, depending on the grades of the ingredients used and on the characteristics desired in the product. *The Chem. Age* 49, 333 (1943).

Water Softener

Hard water is softened by the addition of crystalline alkali-metal tripolyphosphate in an amount sufficient to sequester the alkali-earth metal present, in a slightly ionized condition. Henry A. Jackson, to Hall Laboratories, Inc. Canadian Patent No. 415,773.



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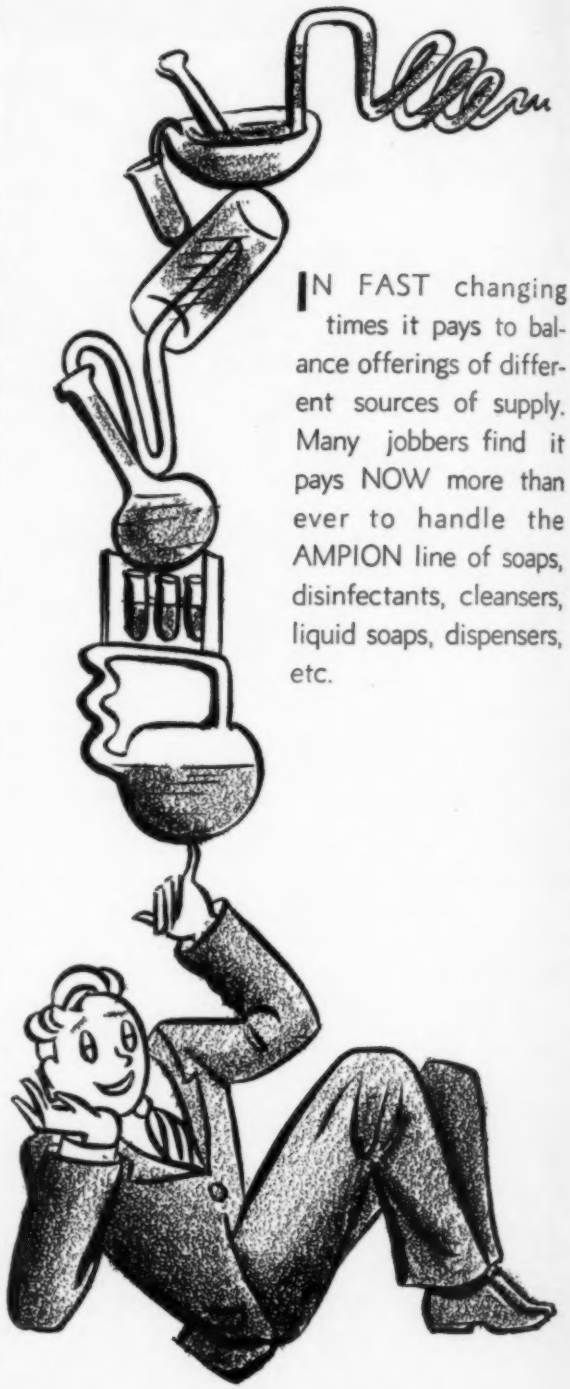

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Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,330,922, Manufacture of Sulphonated Detergents, patented October 5, 1943 by Riewen Riegler, Buffalo, N. Y., assignor to Allied Chemical & Dye Corp., New York. In the manufacture of sulphonated detergents, the improvement which comprises feeding a slurry of the sulphonated detergent containing between about 20% and about 50% solids onto a heated surface to effect a preliminary drying thereof and to form a continuous coherent film having a maximum thickness of not more than 0.03 inch and a volatile content between about 5% and about 12%, removing the partially dried film from the heated surface, and contacting it with a hot circulating gas.

No. 2,331,396, Laundry Sour, patented October 12, 1943 by Ralph H. Humbaugh and Donald N. Utesche, Chicago, assignors to Speare Supply Co., Chicago. A laundry sour consisting of sodium acid fluoride and sodium hexameta phosphate in an amount sufficient to stabilize the acid fluoride.

No. 2,332,097, Insecticide, patented October 19, 1943 by Edward R. McGovran, Hyattsville, Md.; dedicated to the free use of the People of the United States. An insecticide containing methyl phenyl nitrosoamine and pyrethrum extract.

No. 2,332,727, Soap Product and Process of Making Same, patented October 26, 1943 by Floyd E. Joyce and Erik J. Lindhardt, Des Moines, Iowa, assignors to National By-Products, Inc., Des Moines, Iowa. A soapmaking process comprising the steps of providing an uncrutched and undiluted fluid to semi-fluid hot soap, having a moisture content between about 6% and 30% and a temperature between not substantially below 150°F. and up to about 260°F., introducing the soap into a vessel having mulling rotors carried on a revolving crosshead therein, the rotors being supported so that they run slightly above the bottom of the vessel, and slowly revolving the crosshead together with the rotors, while allowing the soap to cool, until the mass stiffens and is broken down into granules due to the action of the mulling rotors.

No. 2,332,960, Insecticide, patented October 26, 1943 by Edward Sydney Redvers Willmore, Watford, and Francis Ashmole Cooper, Berkhamsted, England, assignors to Cooper, McDougall & Robertson Limited, Berkhamsted, England. An insecticide consisting of a powdered mixture comprising finely divided sulphur and an aluminium derivative of cresylic acid which, when suspended in water, hydrolyzes to give a solution of cresylic acid.

No. 2,333,061, Insecticide, patented October 26, 1943 by Marquid D. L. Van Over, Union, N. J., assignor to Woburn Degreasing Company, Harrison, N. J. In combination with a fertilizer, a composition of matter comprising a material selected from the group consisting of one or more organs of the castor plant for use as an insecticide.

Copper Soaps for Rotproofing

Copper soaps made from fatty acids are highly suitable for rot proofing of textiles and can be prepared in large quantities from certain waste products. These copper soaps can be applied to fabrics by a variety of processes, chosen to suit the type of fabric and the plant available.

In hot impregnation the copper soaps are melted together with suitable waxes such as paraffin, fluxing oils, and coloring compounds where these are desired. The dry cloth is passed through a trough of the molten mixture and excess squeezed out by hot rollers. The cloth then passes over hot cans to fuse the mixture of wax and copper soap. Emulsions of copper soaps are also prepared of standard copper content and the goods run through these baths. Such treatment does not involve the use of organic solvents. J. C. Towner. Textile J. of Australia; through *Textile Colorist* 65, 415, 418 (1943).

Adsorption Studies

Anion-active substances such as soaps and nonionic wetting agents do not increase the surface adsorption on kaolin, whereas cation-active substances or invert soaps do increase the surface adsorption. These phenomena are explained in terms of the structure of the adsorbent. It is possible to differentiate between colloidal particles by this method. P. A. Thiessen. Z. Elektrochem. 48, 675-81.

Mothproofing Wool Blankets

In the laundering of wool blankets and other woolens the temperature of the suds and rinse baths is not sufficient to bring about the sterilization of the load and hence it is desirable to make use of a sterilizing treatment in the last rinse. Souring at a pH of 4.5-5.0 using such sours as sodium or ammonium silicofluoride is a satisfactory method.

Under these circumstances it is believed that the residue of fluoride left in the blankets would give them considerable resistance to moth attack. Some of the commercial preparations advertised for use in mothproofing of woolens consist essentially of the compounds mentioned. Such treatment is of course not permanent, since the residue of fluoride sour would be removed by subsequent laundering and would have to be reapplied if protection was to be maintained. C. H. Bayley. *Laundry and Dry Cleaning J. of Canada* 23, No. 9, 14 (1943).

Avocado Fat

The solid fraction of expressed avocado pulp oil, which amounts to about 8 per cent of the oil, has been found to contain 56.6 per cent of palmitic acid, 28.9 per cent of oleic acid, and 0.5 per cent of unsaponifiable matter. C. F. Asenjo and J. A. Goyco. *J. Am. Pharm. Assoc.* 32, 259-60 (1943).

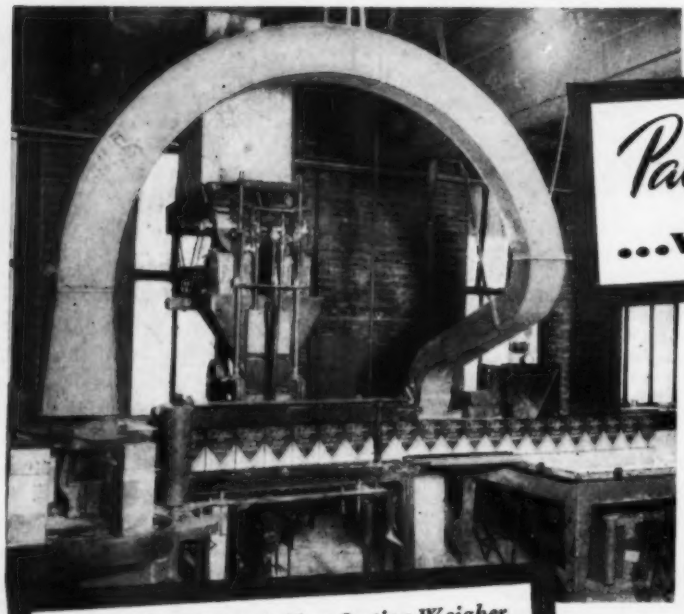

Illustration: Triangle Two Section Weigher for handling soap flakes at Armour & Company, Chicago.

- Fast — Accurate
- Does not break flakes
- Fully and easily adjustable

Package Soap Flakes ...without breakage

HERE'S a weigher specially designed to handle soap flakes without breakage! In wide use throughout the industry, it automatically weighs the flakes, fills the carton and by means of a plunger presses the flakes into the carton. Machine is extremely accurate and will weigh and fill 30 to 40 cartons per minute.

This machine is just one of a complete line of automatic and semi-automatic machines for the packaging of soap products. Write for details and literature on how Triangle machines can step up production and save manpower in your plant.

ARMY E NAVY

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Not until Valencia — the standard of American Pumice — was discovered at Grants, New Mexico, was it thought that a domestic pumice could match the quality of imported Italian Pumice. This inexhaustible deposit at Grants is true pumice stone and not a volcanic ash. It is physically and chemically equal in every respect to the now unobtainable Italian Pumice. • The Valencia plant's output of grades for every need is rigidly under control for particle size, purity, weight and color.

Check this table comparing Valencia with the highest grade of imported Italian Pumice. See for yourself that Valencia is truly the standard of American Pumice.

	American Pulverized Per Cent	Italian Select Per Cent
Silica	72.90	73.24
Alumina	11.28	10.61
Iron Oxide	.86	1.57
Titanium Oxide	.06	.10
Calcium Oxide	.80	1.10
Magnesium Oxide	.36	.40
Soda	3.64	3.03
Potash	4.38	5.58
Sulphuric Anhydride	.03	.05
Loss on ignition	5.20	4.04

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EQUIPMENT

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York 1, mentioning the number of the item.

974—P & G Soap Booklet

Procter & Gamble Co., Cincinnati, has just issued a 26-page booklet —intended primarily for the consuming or lay public—that deals with the early history and background of soap and some of its little-known, though important roles in our modern civilization. "Talking through soap," "reading from soap," "riding on soap" and "dressing in soap" are some of the concepts the booklet illustrates and describes. Although, one does not literally talk through, read from, ride on or dress in soap, soap enters into the manufacture of telephone wires, paper pulp, rubber for tires, etc., woolen goods and leather. The important functions performed by soap in war-time range all the way from its by-product glycerine to its use in quick-drying paint for coating and protecting tanks, battleships and planes.

975—New Feeding Device

A new and claimed improved model of an automatic feeding device for use with dishwashing machines has been developed by Mathieson Alkali Works, Inc., New York, according to a recent announcement. The device is used with dishwashing compound briquets, and consists of a container, which can be mounted on any dishwashing machine and is connected to the water supply. In operation, a stream of water, kept constant regardless of changes in water pressure, trickles over the briquets in the container, forming a solution which meets a stream of clear water in the bottom of the feeder and runs into the wash water. The rate at which the compound is fed into the wash water is adjusted to suit service conditions by means of a feed regulator. Feeding then continues uniformly whenever the machine is in operation. All that is required of the operator is to put fresh briquets into the container, as needed.

976—Tyroglyphid Mite Booklet

"Tyroglyphid Mites in Stored Products," Part I, a survey of published information, by M. E. Solomon, London, has just been received from England. The information presented in the pamphlet has been accumulated during three years of work on Tyroglyphid mites, which infest most types of stored food products. The work forms part of the program of research of the Department of Scientific and Industrial Research on the infestation of stored products by insects and allied pest, on which the Department is advised by the Pest Infestation Research Committee. Chapters include: Morphology and Internal Anatomy, Biology, Bio - Ecology, Physical - Ecology, Tyroglyphids in Stored Products and Their Control.

977—Flexrock Co. Bulletin

Flexrock Co., Philadelphia, manufacturers of floor repairing and building maintenance materials, have just issued a booklet illustrating and describing the functions, uses and characteristics of their floor and surface repairing materials: "Instant-Use," "Ruggedwear," "AWOG," "Colorflex-Plus," "Flextite," "Flexseal," "Rooflex," "Less-Slip Wax" and "Longlife."

978—Wax Booklets Available

National Wax Refining Co., Brooklyn, has recently issued three small booklets dealing with its synthetic and natural waxes, their characteristics and uses. One booklet, "Dependable Waxes for Industry," covers imported natural waxes, "National" synthetic waxes, ozokerites, paraffin waxes, mineral waxes (amorphous type), "National" wax specialties and stearine. Numbers, types, melting ranges and uses are listed. Uses and specifications for "Three Star Brand" ozokerite snow-white and natural yellow waxes are given in booklet on ozokerite. A third booklet deals with the specifications of the company's synthetic bees and carnauba waxes.

979—New Brush Cleaner

As a conservation aid, M & H Laboratories, manufacturing chemists, Chicago, have just introduced their new brush cleaner. The new brush cleaner is a clear liquid that is said to require only a "good soaking and some manipulation" to work its way into the heel of the brush. It does the cleaning with clear water, obviating the necessity of using any other solvents, according to claims put out for the product. It is sold in pint, quart and gallon glass containers.

980—T. G. A. Aims Told

A booklet, "Its Aims and Activities" has been issued by the Toilet Goods Association, New York, recently. Copies of the booklet, which outlines the association's activities, may be obtained from S. L. Mayham, secretary of the association, 9 Rockefeller Plaza, New York.

981—Porcelain Soap Dispenser

A new white porcelain liquid soap dispenser of 24-ounce capacity was brought out recently by Palmer Products, Inc., Waukesha, Wis. The new dispenser is equipped with a patented Neoprene contact valve that is claimed to be acid, alkali and oil proof. Roughly rectangular in design, the new dispenser may be fastened to the wall through a screw hole in the top of the back that extends upward above the lid.

J. J. White In Recent Move

J. J. White Products Co., soap makers, are now located at 7700 Stanton St., Cleveland 4. Their previous address was 5713 Euclid Ave.

W. C. HARDESTY CO.

41 EAST 42nd STREET • NEW YORK 17, N.Y.

RED OIL (Saponified)

STEARIC ACID (Distilled)

HYDROGENATED FATTY ACID

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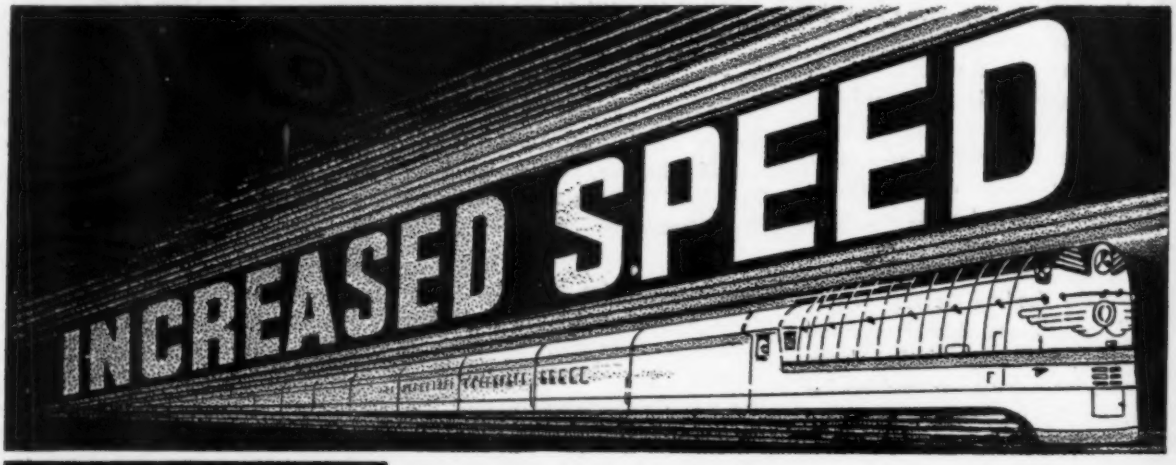

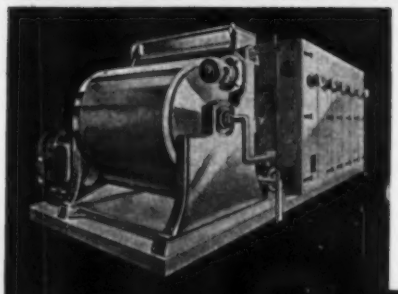

In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog that is yours for the asking.

PROCTOR & SCHWARTZ INC · PHILADELPHIA

NEW PROCTOR *Flake Soap* SYSTEM

OPA Commodity Practices Regulation as Amended by Amendments 1 and 2—Bar or Package Soaps or Cleaners

TITLE 32—NATIONAL DEFENSE
Chapter XI—Office of Price Administration

Part 1386—Soaps and Glycerine
(Commodity Practices Regulation 1, as Amended by Amendments 1 and 2)

BAR OR PACKAGE SOAPS OR CLEANSERS

In the judgement of the Price Administrator it is necessary in order to effectuate the purposes of the Emergency Price Control Act of 1942 and to prevent manipulation practices which are equivalent to or are likely to result in price increases and evasions of the General Maximum Price Regulation in the sale of bar or package soaps or cleansers to prescribe and limit further changes in weight and quality of such products.

A statement of the considerations involved in the issuance of this Regulation has been issued simultaneously herewith and filed with the Division of the Federal Register.

Therefore, under the authority vested in the Price Administrator by the Emergency Price Control Act of 1942, and in accordance with Procedural Regulation No. 1 issued by the Office of Price Administration, Commodity Practices Regulation No. 1 is hereby issued.

Sec.

1386.1 Prohibition against changes in weight or quality of bar or package soaps or cleansers sold or delivered by manufacturers thereof.

1386.2 Definitions.

1386.3 Records and reports.

1386.4 Enforcement.

1386.5 Exceptions.

1386.6 Petitions for amendment.

1386.7 Applicability.

1386.8 Effective date.

1386.9 Report form.

1386.1 *Prohibition against changes in weight or quality of bar or package soaps or cleansers sold or delivered by manufacturers thereof.* (a) On and after July 21, 1942, regardless of the terms of any contract, lease or other obligation, no manufacturer thereof may sell, offer to sell, or deliver to any person bar or packaged soap or cleansers which differ in weight or quality from a bar or package soap or cleanser delivered or offered for current delivery by such manufacturer in the market area where such person is located during the thirty day period ending July 17, 1942, except as provided in paragraphs (b), (c), (d), and (e) of this section.

(b) Notwithstanding the provisions of paragraph (a) of this section, a manufacturer may improve the quality of any bar or package soap or cleanser delivered or offered for current delivery by him during the thirty day period ending July 17, 1942, but in determining the maximum price for the improved bar or package soap or cleanser under the General Maximum Price Regulation it shall be deemed to be the same commodity as the non-improved bar or package soap or cleanser.

(c) Notwithstanding the provision of paragraph (a) of this section any manufacturer may sell, offer to sell, or deliver in any market area of the United States any bar or package cleanser or washing powder having an anhydrous soap content of 20% or less, which had been delivered or offered for current delivery during the thirty day period ending July 17, 1942, in any market area in the United States.

The amendments to CPR No. 1—giving the approved OPA procedure for adjusting pricing policies in the case of soap formula changes made necessary by FDO-86—were released just too late to be included in our November issue. For the record, the complete amended text of CPR No. 1 is reproduced here with.

(d) (1) Notwithstanding the provisions of paragraph (a) of this section, a manufacturer may make changes in the composition of a bar or package soap delivered or offered for current delivery by such manufacturer in any market area of the United States during the thirty day period ending July 17, 1942 if such changes are required by Food Distribution Order No. 86, as issued by the War Food Administration on October 18, 1943; *Provided*, That:

(i) Where the result of any such change is to reduce the weight of the total anhydrous soap content in a bar by more than one per cent, the cut weight of such bar shall be increased to such an extent that the weight of its total anhydrous soap content is equal to at least 99 per cent of the weight of its total anhydrous soap content prior to the change.

(ii) Where the result of any such change is to reduce the weight of the total anhydrous soap content of a package by more than three per cent, the packed weight of such package shall be increased to such an extent that the weight of its total anhydrous soap content is equal to at least 97 per cent of the weight of its total anhydrous soap content prior to the change.

The maximum prices of a bar or package soap whose cut or packed weight is increased as provided above, as established under any applicable regulation issued by the Office of Price Administration, shall remain unchanged.

(2) Each manufacturer who changes the composition of a bar or package soap under the provisions of this paragraph (d) shall, prior to making delivery of any such changed bar or package soap, submit by registered mail to the Chemicals and Drugs Price Branch, Office of Price Administration in Washington, D. C., a report on the form set out in 1386.9, or on a form copied therefrom, containing the applicable information required by that form.

A new report shall similarly be submitted whenever there is a subsequent change in the total anhydrous soap content or in the cut or packed weight of such bar or package soap.

(e) (1) A manufacturer need not increase the packed weight of a package soap to the extent required by paragraph (d) above if he can not do so without substantial hardship, and he fills such package to a packed weight at least as great as the packed weight prior to any changes under paragraph (d). Where the packed weight is less than the packed weight required by paragraph (d), however, his maximum prices and the maximum prices of all other sellers of such package soap, as established under any applicable regulation issued by the Office of Price Administration, shall be reduced in the same proportion as the packed weight is reduced from that required by paragraph (d). The resulting prices shall be computed to the nearest cent, except in the case of manufacturers, who shall compute their prices to the nearest tenth cent. Each seller who is required by any regulation issued by the Office of Price Administration to post the maximum price of such package soap shall change such posting to show the reduced maximum price.

The manufacturer of any package soap whose packed weight is adjusted under this subparagraph (1) shall firmly affix to each case of such package soap for a period of ninety days from the first delivery thereof at changed maximum price, in such manner as to be clearly visible to the purchaser, a notice containing the following:

(i) Statement that the case contains a size of the particular package soap different from the size (specify) generally delivered by the manufacturer prior to November 1, 1943.

(ii) A statement that each seller's maximum price for the new size, as established by the Office of Price Administration is——(specify) per cent less than the maximum price established for the size (specify) generally delivered by the manufacturer prior to November 1, 1943, and shall be figured to the nearest cent.

(iii) A statement that each seller who is required by any regulation issued by the Office of Price Administration to post the maximum price of such package soap shall change the posting to show the reduced maximum price.

(2) A manufacturer who has adjusted the packed weight of a package soap under paragraph (e) (1) above, shall, prior to making any delivery of the package soap at the adjusted weight, submit by registered mail to the Chemicals and Drugs Price

Branch of the Office of Price Administration in Washington, D. C., a report on the form set out in 1386.9, or on a form copied therefrom, containing the applicable information specified therein.

A new report shall similarly be submitted whenever there is a subsequent change in the total anhydrous soap content or packed weight of the package soap.

(3) After a manufacturer has adjusted the packed weight of a package soap so that maximum prices are required to be reduced under paragraph (e) (1) above, no further changes may be made in the total anhydrous soap content of such package soap except to increase such total anhydrous soap content to an amount equal to at least 97 per cent by weight of the total anhydrous soap content prior to any changes therein under the provisions of paragraph (d). Where such an increase in total anhydrous soap content is made, the maximum prices of all sellers shall become the same as they were prior to the reduction made under the provisions of paragraph (e) (1).

Where the total anhydrous soap content of a package soap is increased as specified above, the manufacturer shall firmly affix to each case of such package soap for a period of ninety days from the first delivery at an increased maximum price, in such manner as to be clearly visible to a purchaser, a notice stating that resellers may increase their maximum prices for such package soap to their maximum prices for such package soap in effect on November 1, 1943.

1386.2 *Definitions.* (a) This Commodity Practices Regulation No. 1 and the terms appearing therein shall be construed as follows:

(1) "Person" includes an individual, corporation, partnership, association, any other organized group of persons, legal successor or representative of any of the foregoing, and includes the United States, any agency thereof, any other government, or any of its political subdivisions, and any agency of any of the foregoing.

(2) "Manufacturer" means a person who packages soaps or cleansers or cuts or forms or stamps the same into bars.

(3) "Soap" means the product formed by the saponification or neutralization of fats, oils, waxes, rosins, or their acids (fatty acids) with organic or inorganic bases, or any detergent composition containing such product.

(4) "Bar soap or cleanser" means the following kinds of soap or cleanser in the size or type of bar which is customarily sold to household consumers:

(i) Toilet soap.
(ii) Laundry soap.
(iii) Bar cleansers.

(5) "Package soap or cleanser" means the following kinds of soap or cleanser in the size or type of package which is customarily sold to household consumers:

(i) Granulated, powdered or sprayed soap.
(ii) Soap chips and flakes.
(iii) Washing powder.
(iv) Cleansers and scouring powders.

(6) "Differ in weight" refers to a difference in marked weight in the case of package soaps or cleansers which have a marked weight or in packed weight in the case of package soaps or cleansers which have no marked weight or in cut weight in the case of bar soaps or cleansers.

(7) "Marked weight" is the net weight of the contents thereof as marked on a package of soap or cleanser which is not in bar form.

(8) Packed weight" is the net weight of the contents of a package of soap or cleanser not in bar form immediately after packaging.

(9) "Cut weight" means the weight of a bar of soap or cleanser immediately after being cut, formed or stamped, into bars.

(10) "Differ in quality" refers to:
(i) A difference in serviceability per unit weight in the use for which the soap or cleanser is customarily intended, or
(ii) A difference in anhydrous soap content.

(11) "Improve the quality" refers to:
(i) An increase in the anhydrous soap content of a bar or package soap or cleanser, or
(ii) An increase in the serviceability per unit weight in the use for which the soap or cleanser is customarily intended.

(12) "Anhydrous soap content" means the anhydrous soap content as determined by the official methods for testing soap set out in Federal Specification P-S-536 for Soap and Soap Products; General Specifications for Sampling and Testing.

(13) "Market area" means the geographical area in which a manufacturer has delivered or offered for current delivery a particular bar or package soap or cleanser during the thirty day period ending July 17, 1942.

(b) Unless the context otherwise requires, the definitions set forth in section 302 of the Emergency Price Control Act of 1942 shall apply to other terms used in this Commodity Practices Regulation No. 1.

1386.3 *Records and reports.* (a) Every manufacturer shall by September 17, 1942 prepare and file with the Office of Price Administration in Washington, D. C., a detailed description of each weight and quality of bar or package soap or cleanser delivered or offered for current delivery by him during the thirty day period ending July 17, 1942 and of the geographical area in which he delivered or offered for current delivery such bar or package soap or cleanser during said period.

(b) Every such manufacturer shall submit such reports to the Office of Price Administration and keep such other records in addition to or in place of the records required in paragraph (a) of this section as the Office of Price Administration may from time to time require.

1386.4 *Enforcement.* (a) Persons violating any provision of this Commodity Practices Regulation No. 1 are subject to the criminal penalties and civil enforcement actions provided for by the Emergency Price Control Act of 1942.

(b) Persons who have evidence of any violation of this Commodity Practices Regulation No. 1 or any price schedule, regulation, or order issued by the Office of Price Administration, or of any acts or practices which constitute such a violation, are urged to communicate with the nearest District, State, Field, or Regional Office of the Office of Price Administration, or its principal Office in Washington, D. C.

1386.5 *Exceptions.* (a) An exception to the provision of this Commodity Practices Regulation No. 1 may be granted to any manufacturer who can establish

(1) That compliance with the provisions of this Commodity Practices Regulation No. 1 will cause him substantial hardship.

(2) That the granting of such exception will not lead to manipulative practices which will defeat or impair the purposes of the Emergency Price Control Act of 1942, and

(3) That the granting of such exception will not lead to evasions of the General Maximum Price Regulation.

(*Turn to Page* 143D)

WASHINGTON LETTER

(*From Page* 35)

acid, stearic acid, corn oil, castor oil and oiticica oil.

The eased supply situation on glycerine was further indicated in a release from the Department of Agriculture, November 22, reporting on allocation to various users for the month of December. Manufacturers of military and essential civilian products will get 100 per cent of their December requirements. Manufacturers of a group of products classified as less essential, and including synthetic detergents, toilet preparations, dentifrices, shaving preparations, embalming fluids, adhesives, etc., will get 100 per cent of their average monthly use during 1940. All applicants, however, will get up to 1,150 lbs. of glycerine, regardless of the quantity used in 1940.

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Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

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Manufacturers of MORTICIDE
A Concentrate for Bed Bug Sprays

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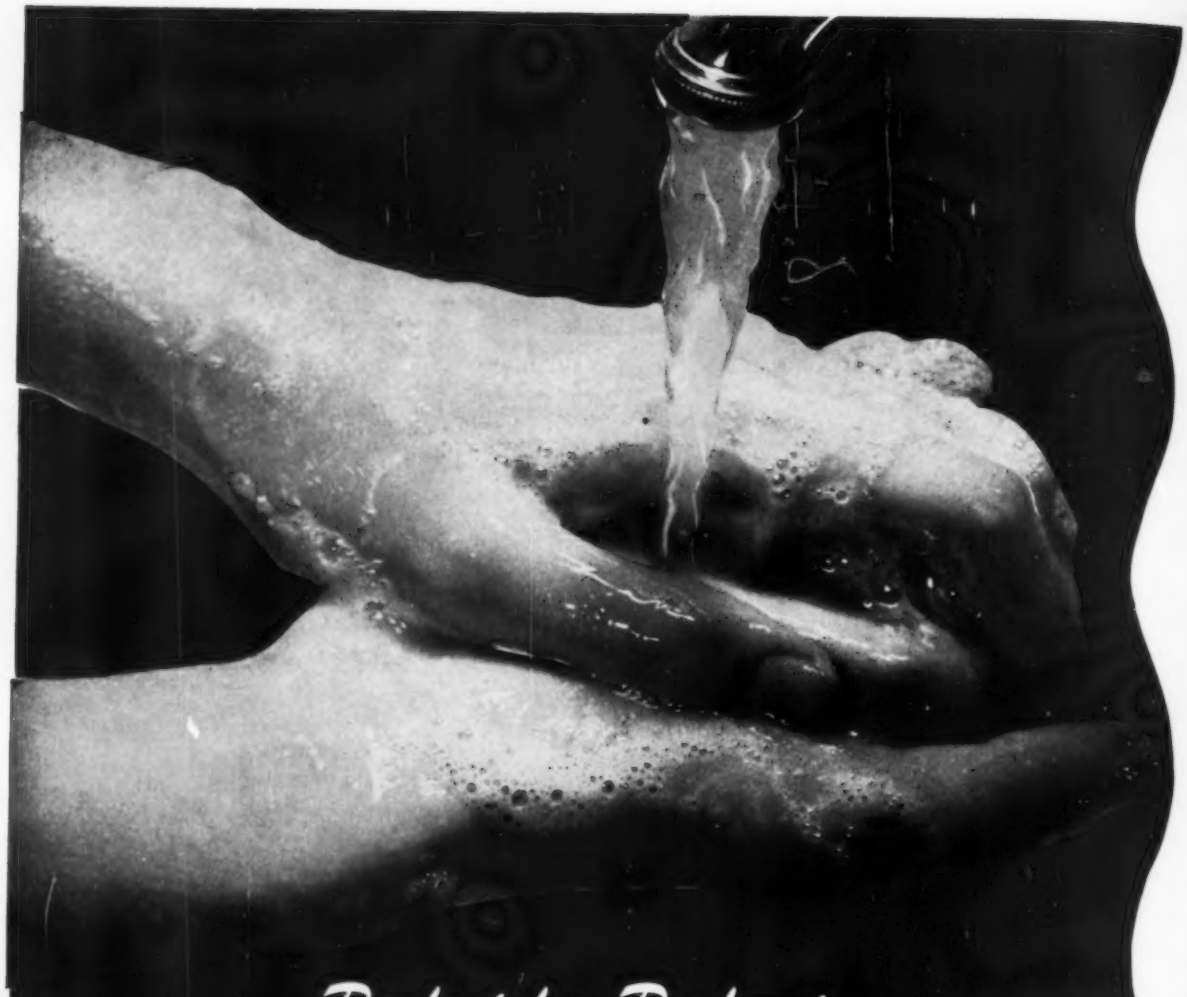
Texas office: The Carroll Co., 1323 Wall St., Dallas, Texas



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Even when Oil of Citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

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MANUFACTURERS OF AROMATIC CHEMICALS, ESSENTIAL OILS, PERFUMES AND FLAVORS

WILL PRE-WAR PACKAGES GET POST-WAR SALES?

LET YOUR POST-WAR PACKAGE POUR

Don't displease post-war users of your product with a wasteful, messy, dribbling container! Keen competitive conditions will demand every sales advantage . . particularly a package that "pours like a pitcher" without drip or spill or spatter. Millions of BARROLL POURING NOZZLES have long proved the solution to the annoying spilling problem. They control pouring perfectly and seal with standard screw caps. Here's the package people prefer . . the one you'll need to get the jump on post-war competition. Be ready. Your can maker knows all about these popular pouring spouts. Ask him . . or write us for cooperation.

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True, Pyrethrum is scarce now. That hurts all around — but this very scarcity stimulates research and development of new ideas and products.

Many ideas for new products fizzle out when laboratory tests or field trials develop one or more practical drawbacks.

We are happy to say, however, that we have several new products undergoing practical usage which look very good.

Naturally, we will give you the advantage of these products just as soon as our old-fashioned caution is satisfied that they are thoroughly reliable for you.

JOHN POWELL & CO., INC.
114 East 32nd Street, New York City.

INSIDE NEWS

DECEMBER PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1943

U.S. Tin Supply Depends Largely On Texas Smelter Constructed In The Nick Of Time

Young technician uses balance to determine amount of tin in slag after extraction from Bolivian ore. Laboratory control helps insure high metal recovery at Longhorn plant.

News of U. S. tin resources is now being made available through the heavy veil of censorship which shrouds this strategic metal.

Among many stories of unpreparedness before Pearl Harbor, this is a story of foresight and enterprise on the part of both Government and Industry.

Realizing the danger of being cut off from processed metal by seizure of smelters in the Dutch East Indies and bombing of smelters in the British Isles, the U. S. secured Bolivia's entire tin output for a smelter yet to be built. When negotiations were completed, construction of the big smelter in Texas began.

The Billiton Company, experienced in East Indies tin production, built the Longhorn plant on the Texas Gulf Coast, from which tin was delivered by April 5th, 1942.

Behind this achievement is the long-standing realization of the unsatisfactory dependence of U. S. tin on distant foreign sources. At the same time, it was realized that Bolivian ores were of lower grade, would require hard rock mining methods, while East Indian high grade ores were largely alluvial. In 1937, territories now under Japanese control produced 140,000 long tons, Bolivia only 25,000.

The U. S. has always used more tin than any other nation in the world but never smeltered it on a major scale until today. Dutch and British smelters, closer to sources of supply, were more economical. As a result, two smelters constructed during World War I were abandoned because they did not pay.

Today, the Government smelter in Texas is producing 50,000 long tons a year. 498

Typhus Controls

American medical discoveries which promise to wipe out typhus fever among American forces all over the world have been announced. Much is preventive medicine. Since body lice are carriers of typhus, American discovery of a chemical which will kill cooties and their eggs is hailed as a miraculous discovery. 499

Ecuadorian Hemp

A new source of fibre has been discovered in the Pasaje area of Ecuador and 500 plants of the African bowstring hemp type are under cultivation. It is reported to be "as good as, if not better than, sisal hemp". With manila hemp cut off by the war, the Americas are cooperating in a program to increase fibre production. 500

Polyvinyl Compounds

Polyvinyl compounds in a special form are claimed to make an excellent undercoat when it is desired or necessary to coat rubber surfaces with a lacquer of oil varnish, according to a recent British patent. Rubber balls, for example, can be so coated to produce a very adherent finish. 501

Vegetable Rash

Some vegetable dehydrators have reported that their employes working at trimming tables and the like have been troubled with a rash or swelling of the hands—a sort of vegetable poisoning. Since prevention is more important than remedy, some plants use a special chemical preparation which is in most cases a preventive as well as remedy, to supplement wearing of rubber gloves, keeping hands as dry as possible and washing with disinfectant soap. 502

Effective Finishes

Hammered metal finishes are simulated by coatings described in two recent patents. The first involves the application of a coating containing metallic powders and spraying with large droplets of solvent. The second advocates the production of hammered effects in one coating by the use of a small amount of raw rubber. 503

Cow to the Rescue

Vinegar from milk? An enterprising Western outfit has uncovered a means of processing a milk residual product into a high quality white still vinegar. Thus the cow helps again to relieve wartime shortages, if you're interested. 504

Industrial Thermometer

A one-piece industrial thermometer designed to save critical materials in war time has been introduced. It is said to be dustproof, rattleproof and practically fumeproof—with a wider than usual angle of vision for the mercury column. 505

Fish Positioner

To reduce the amount of manual labor involved in packing fish in cans, an inventor has recently perfected and patented a mechanism for positioning the pack. 506

Milk Dryer

A new process for drying milk has been developed and patented recently. The system permits aeration of the milk while drying. 507

NATIONAL CAN

PLANTS: NEW YORK · BOSTON · BALTIMORE · CHICAGO · HAMILTON, OHIO · FORT WAYNE, INDIANA

Antiseptic Foot Spray

In place of the usual foot baths the government is reported to be experimenting with the use of atomizers which disperse an antiseptic spray for the prevention of epidemics of athletes' foot in Army camps, shower rooms, bathing pools, etc. The efficacy of foot baths has been questioned by many authorities in the past who report that in many cases they serve, after the antiseptic liquids have lost their potency, merely as sources of infection. The units being tested consist of sets of nine atomizers which throw an antiseptic spray over the feet. An order for 1,000 of the units is reported to have been placed on the west coast. 508

Fungicides For Post-War Control

A serious post-war problem will be the development of a control program to prevent entry into the country along with returning members of the Armed Forces of organisms that may cause disease or damage American crops or plants. Inasmuch as the potential danger lies principally with sporulating organisms, such as fungi and molds, fungicides will inevitably be of primary importance in formulating the control program. 509

Keeping Quality Bettered

To improve the keeping quality of the juice extracted from fruits, a new method of cleansing the surface of the fruit prior to extracting the juice has been developed. Information on a simple procedure is available. 510

Second Bactericide From Bread Mold

The common forms of green mold on bread and cheese—penicillium notatum—have given the world penicillin, heralded as the greatest yet known germ killer. Scarcely has the word of a few examples of its remarkable potency come into the thinking of the man in the street before scientists have announced a second anti-bacterial substance coming from this same bread-cheese mold. This newest bactericide is able to act against a number of organisms which are not especially sensitive to penicillin. If you've missed details of its name, background and reactions, they're yours for the asking. 511

Britain Permits Paint For Private Property

Britain has permitted the manufacture of paint in four colors for outside use on private property. Permission to manufacture the "utility" paint has been extended to selected firms in given areas in containers containing one pint and one quart. The specifications for the paint call for a special combination of materials. The intention is that the paint be used for exterior purposes only, and repainting done only where necessary. The manufacture of household paints heretofore had been banned in Britain, to save critical materials. 512

Technical Topics

VITAMINED CHOCOLATE — Foreign experiments show that vitamin-fortified chocolate is a practical (and pleasant) way of providing vitamins, having a natural tendency towards preservation of potency of the vitamins. 513

BIODYNES—The newest application of life forces, this time through the cosmetic field, is announced. Incorporated in a night cream and a day lotion, they are reported by a leading research institution to step up skin respiration which usually slows as age increases. 514

MULTI-USE GRASS—A new kind of grass found in a South American country is reported rich in a variety of uses—ranging from insect repellent to clearer of ticks from cattle with brief pasturing. 515

COSMETIC OILS—Oil from a nut tree, anti-oxidated by gum from a tropical tree, has been suggested for cosmetics because of its property of absorbing and holding odors. 516

"DEMEROL"—A synthetic substitute for morphine, formula for which is available, will soon be ready for the public. 517

WATER STERILIZER—Foreign experiments reveal iodine, in a formula solution which is available, is more effective than chlorine in sterilizing water. 518

WOOD PRESERVATIVE—A process which forces zinc chloride into wood under designated means is said to preserve the life of the wood three to ten times. 519

LACTIC ACID—Conversion of lactic acid to a substance useful as adhesives, impregnating and coating materials has been worked out by a Department of Agriculture. 520

QUEBRACHO EXTRACT — Recently suggested as a flotation aid in the froth purification of barytes minerals. Barytes floated with customary froth promoters, such as fatty acid compounds, often presents a difficulty in obtaining a good concentration, paticularly when the ore contains gangue minerals of the chlorite group. 521

AMINO-HYDROXYPHENYL ARSINE —Introduced by a foreign pharmaceutical company for the treatment of spirochaetal infections similar to syphilis. It is offered in ampoules suitably diluted to facilitate the preparations of isotonic solutions for intravenous injection. 522

SODIUM FLUORIDE—A high quality, silica-free purity is declared to be possible from hydrofluosilicic acid in a recent British patent. 523

MONO SODIUM GLUTAMATE—A desirable replacement or extender for this article (used extensively for flavoring soups, gravies, stews and other similar products, and which is now practically unobtainable for civilian use) has recently become available. A bone-dry powder, it is said to be specially desirable, from flavor and nutritional standpoint, in production of bouillons. 524

METHOXYTRIGLYCOL ACETATE—Offered in research quantities, with the suggestion that its low volatility, non hygroscopicity, and excellent solvent powers for cellulose esters and synthetic resins indicate a potential usefulness in protective coatings, printing inks, and as an anti-dusting agent for fine powders. 525

HYDROFLUORIC ACID — Production by a continuous process from fluorspar and sulphuric acid is described in a recent British patent. Instead of mixing ground fluorspar and sulphuric acid into a paste-like mixture, the patent advises a procedure which is claimed to produce gaseous fluorine compounds more uniformly and at a lower temperature. 526

SODIUM SILICOFLUORIDE — Under investigation by a foreign leather industry as a preservative for hides against attack by hide beetles. 527

"STOREHOUSE" FISH—A prolific fish, known under many names from Maine to South Carolina, is a storehouse of all the elements necessary for a healthful diet, it is claimed. The fish's name and elements are yours, if you're interested. 528

PLANES TO POWDER—A plant engaged in an airplane construction process contributes to new cosmetic cases, it is reported. 529

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

NATIONAL CAN CORPORATION

Manufacturers of

SANITARY PACKERS CANS · PLAIN AND LITHOGRAPHED CANS FOR FOODS, DRUGS, OILS, PAINTS, VARNISHES · STEEL DRUMS AND PAILS

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180 VARICK STREET · NEW YORK, N. Y.
BOSTON · CHICAGO · PHILADELPHIA · ST. LOUIS · LOS ANGELES
Plant and Laboratories: Bayonne, N. J.

POST WAR INSECTICIDES...

No one can predict how long the war will last, what conditions will prevail immediately thereafter, or what further new developments will occur in the meantime.

However, there are three points on which we can be so definite as to practically remove them from the field of prophecy to that of certainty.

Insecticides will be different, more varied, better suited to the specific purposes for which they will be recommended and more effective.

Pyrethrum may be substituted by other insecticides for some purposes but in general, it will remain unchallenged in regard to its two great advantages—rapid action on insects and freedom from toxicity to people. Its use will increase, not diminish.

D & O will maintain the leadership in the field which they have established in the last two years.

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Hats to all of You

A TOAST

HENRY J. BECKER
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When the National Association of Insecticide and Disinfectant Manufacturers convenes again next year, may the war be behind us; and ahead for all the peoples of this world, abundant good will and PEACE ON EARTH

JOHN W. FELTON, Jr.
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"ODOR PROBLEMS DISAPPEAR WHEN

ODOSOL No. 2

—a powerful deodorant which changes the characteristic odor of any product in which it is used.

Odosol No. 2 is recommended for all types of shoe polish and cleaner preparations. It may also be used in all metal and automobile polishes as well as in turpentine, benzol and other solvents with unpleasant odors. Use: 1 oz. to 1 gal. of liquid polish. And 1 lb. to 100 lbs. of paste polish.

SOYAROME "A"

—overcomes the Soy Bean Oil odor used in liquid hand soaps.

If you are substituting soy bean oil for cocoanut oil in your liquid hand soaps, you will be particularly interested in Soyarome "A" which effectively overcomes the "lingering odor" that remains after washing with the soap. Use: 1 oz. to 4 gals. of liquid hand soap.

KLENZ-AIRE DEODORANT OILS

—available in the following odors:

Antiseptic	Honeysuckle	Oriental
Bouquet	Jasmin	Pine Needle
Cedar	Lavender	Rose
Clover	Lilac	Sandalwood
Eucalyptus	Mint	Trefle
Gardenia	New Mown Hay	Wisteria

Formula for Use: 3 oz. Klenz-Aire Deodorant Oil—3 oz. Formaldehyde U.S.P. 40%—Balance, water to make one gallon.

AROMATIC P

15 East 30th Street, New York INCORP OR

ATLANTA · DALLAS · CHICAGO M

"AROMATIC'S SPECIALISTS ARE NEAR"

NEUTRACENE

—overcomes the powerful, unpleasant odors of Lethane, Pyrethrum and Kerosene.

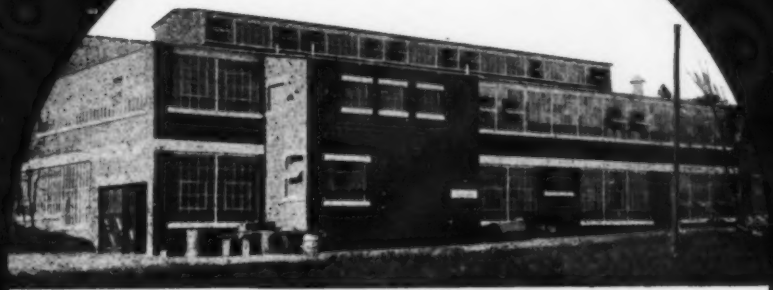
There has been a wonderful response to Neutracene ever since we introduced it. It is a sure way of overcoming the odors of Lethane, Pyrethrum and Kerosene at a very low cost. Neutracene is different because when just the right amount is used, it has the effect of entirely neutralizing unpleasant odors in fly sprays. We suggest the use of 1/16 oz. of Neutracene to 1 gal. of spray.

PERFORMALS

—formaldehyde odors for embalming fluids.

Bouquet No. 10 Violette No. 14
Rose No. 11 Wisteria No. 15
Lilac No. 12 Pine No. 16

Soluble when used ½ oz. of Performal per gallon of Formaldehyde U.S.P. 40%. If your preparation contains water, we have Performal No. 2 Water Soluble.



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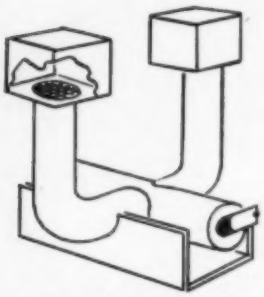
MEMPHIS · PITTSBURGH

VELSICOL AR-50

Rates AA as Repellent in SCREEN TEST



CHEMOTROPOMETER

This apparatus employs the use of blue light to attract flying insects to two screens for the purpose of testing their response to different substances present on one of the screens. Subjection of flies directly to the test materials present in the state in which they would be used in field tests evokes a significant response. The method is easily used and gives a fair picture of the effectiveness of any given material as a repellent.

J. of Econ. Ent., June 10, 1943

VELSICOL AR-50 when tested by this method in comparison with insecticide materials A, B, C, and D, used in undiluted concentrations showed the highest degree of initial repellency, and at the end of 45 minutes was still twice as effective as the next best material tested.

AR-50 KILLS *and* REPELS HOUSEHOLD PESTS AT THE POINTS OF ENTRANCE AND BREEDING PLACES

AA KILL IS NOT ENOUGH IN A HOUSEHOLD SPRAY!

VELSICOL AR-50

GIVES AN ADDED FEATURE TO YOUR HOUSEHOLD SPRAYS!

AA kill is a *must* for your household spray! But under conditions of consumer usage insect repellency is *another important factor* in contributing to the efficiency of your spray.

That's the *added feature* that Velsicol AR-50 can give you! By actual test its insect repellency lasts longer with a single application than other active spray ingredients! Think how much more effective your product can be with this great increase in repellency! Yet it still gives that potent knockdown and AA kill. Find out today about Velsicol AR-50 —the powerful ingredient in sprays for flies, bedbugs, mosquitoes, and many other household pests!

It's economical! It's available in abundant quantity! Its quality never varies. Find out for yourself how Velsicol AR-50 can increase your sales and multiply your profits. Write for free samples today.

FOR CATTLE SPRAYS

Velsicol AR-60

Proved in the barn! Approved by the Trade! Velsicol AR-60 kills more flies, kills them quicker and keeps them away longer than any spray ingredient. Manufacturers are demanding it in ever increasing quantities. Write for samples or order today!

VELSICOL

VELSICOL *Corporation*

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The world's finest commercial disinfectants are manufactured by

Baird & McGuire, Inc.
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Yes, it is Murder we want in the Dairy Industry. Murder of the kind your products will produce. Murder of billions!

Here's why: Dairy products (milk, butter, ice cream, cheese, etc.) are precious foods, vital at all times. They are easily contaminated. Flies particularly, must be eliminated from the 20,000 dairy products plants. And you can help.

The Dairy Industries are large markets for fly-killing products. You can sell them now and after the war.

Let us tell you about: Advertising media — lists of plants — jobbers who want to sell your products — and costs. Write today for full information. No obligation.

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is being employed throughout the world to protect the armed forces from insect infestation.

When war requirements are satisfied it will again protect the home, the garden and the farm.

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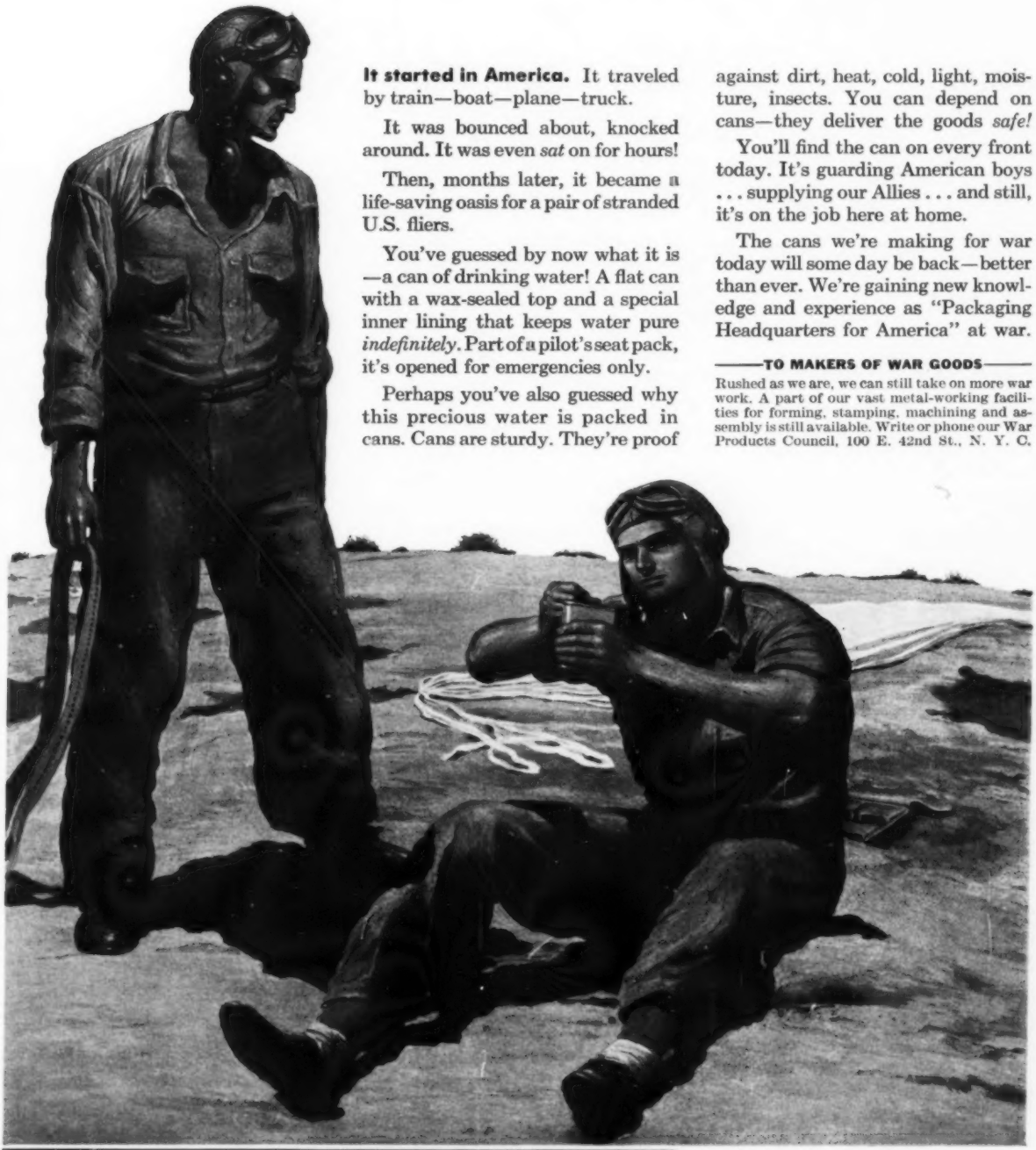
The Great, Natural, **SAFE** *Vegetable Insecticide*

The story of the traveling oasis



It started in America. It traveled by train—boat—plane—truck.

It was bounced about, knocked around. It was even *sat* on for hours!

Then, months later, it became a life-saving oasis for a pair of stranded U.S. fliers.

You've guessed by now what it is—a can of drinking water! A flat can with a wax-sealed top and a special inner lining that keeps water pure *indefinitely*. Part of a pilot's seat pack, it's opened for emergencies only.

Perhaps you've also guessed why this precious water is packed in cans. Cans are sturdy. They're proof against dirt, heat, cold, light, moisture, insects. You can depend on cans—they deliver the goods *safe!*

You'll find the can on every front today. It's guarding American boys . . . supplying our Allies . . . and still, it's on the job here at home.

The cans we're making for war today will some day be back—better than ever. We're gaining new knowledge and experience as "Packaging Headquarters for America" at war.

——TO MAKERS OF WAR GOODS——

Rushed as we are, we can still take on more war work. A part of our vast metal-working facilities for forming, stamping, machining and assembly is still available. Write or phone our War Products Council, 100 E. 42nd St., N. Y. C.

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—BUY WAR BONDS

ONE DISINFECTANT WITH

all eight-

VITAL FEATURES

It takes eight important qualities to make a good disinfectant, say authorities...and Yarmor* 302 Pine Oil offers *all eight.*

RAPID PENETRATION, FAST ACTION Yarmor 302 penetrates quickly and thoroughly, acts fast.

LOW COST

Yarmor 302 is low in cost, but offers manufacturers superior performance.

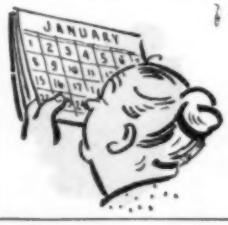
NON-TOXIC TO MAN OR ANIMALS It's deadly to germs, but Yarmor 302 is nontoxic to humans and animals when used in a disinfectant.

NON-STAINING

Used in disinfectants, Yarmor 302 will not stain, or tarnish floors or walls.

AGREEABLE TO THE NOSE

Yarmor 302 leaves a piney fragrance that's fresh and clean —a real favorite.



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Tests prove Yarmor 302 retains its germicidal properties indefinitely.

EASY SOLUBILITY OR MISCIBILITY Yarmor 302 mixes readily with soaps—diluting to form snowy-white emulsions.

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High temperatures are not required—Yarmor 302 disinfectants are effective at *any* working temperature.

LIMITED STOCKS NOW AVAILABLE...

*Reg. U.S. Pat. Off.

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY

INCORPORATED

961 Market Street • Wilmington 99, Delaware

09-84

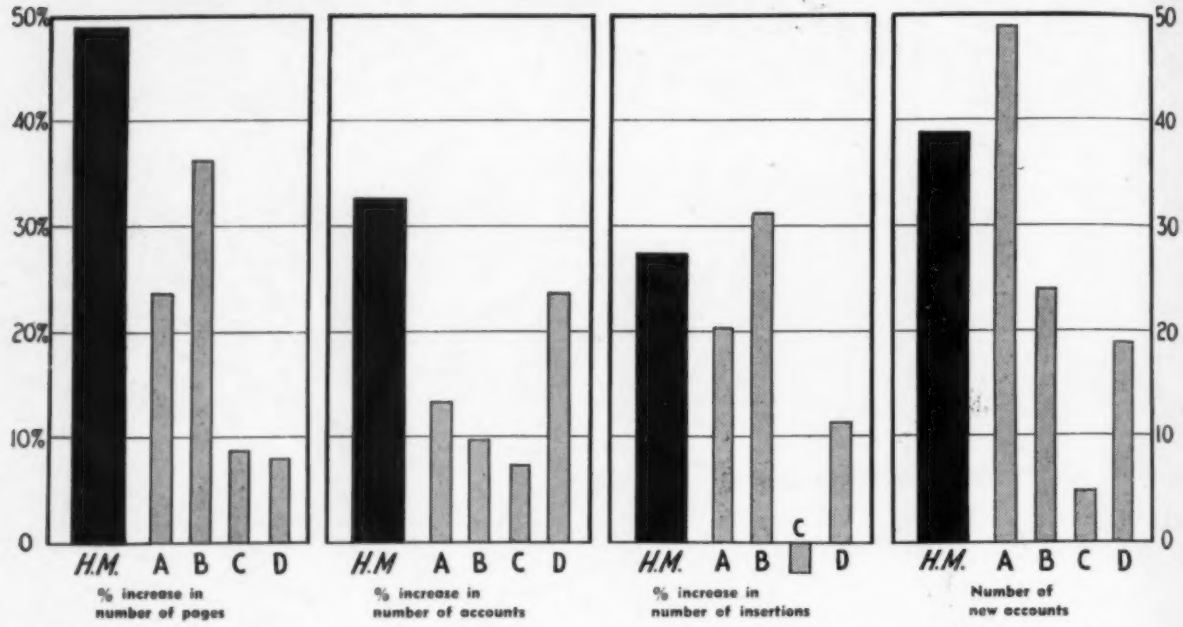
Get ready to GO when the light turns green !!

Spray manufacturers should plan now for the day when Pyrethrum is again available in ample quantities for civilian consumption. When the war is won the civilian consumer will look to you for the *all-purpose spray* formulated with Pyrethrum—no substitutes for Pyrethrum for this purpose will be acceptable when Pyrethrum is released from the service—Why? Because Pyrethrum is a natural—Here at Pyrethrum headquarters we are keeping our finger on the pulse of the insecticide market and are in a position to give to spray manufacturers valuable, unbiased information. So keep in touch with Prentiss and be ready to go when the light turns green.

R. J. PRENTISS & CO.

80 JOHN STREET, NEW YORK 7, N. Y. 9 SO. CLINTON ST., CHICAGO 6, ILL.

PROGRESS REPORT



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HOSPITAL MANAGEMENT offers you a most economical and effective method of telling the buyers in this market of the advantages of your products. Going directly to more than 5,000 superintendents and department executives, HOSPITAL MANAGEMENT is able to and does produce results for its advertisers.

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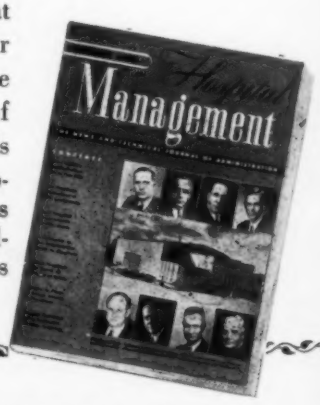
Its editorial achievements, coupled with exclusive news-gathering facilities, give each issue *impact* on the market. That in turn spells results for advertisers, for only editorial power can put punch into advertising pages.

There is a great deal more to our story. We'd welcome the opportunity of giving you details about how our supplementary services will help your advertising create sales for you.



HOSPITAL MANAGEMENT

The only Hospital publication which is a member of both the ABC and ABP.

100 E. OHIO STREET, CHICAGO (11) • 330 W. 42nd STREET, NEW YORK, (18)

We Offer-- INSECTICIDES DISINFECTANTS ROACH and ANT POWDER

75,325 SQUARE FEET OF FLOOR SPACE USED EXCLUSIVELY FOR THE MANUFACTURE OF SANITATION PRODUCTS

Our stocks are adequate and we offer for immediate delivery:

DISINFECTANTS . . .

Disinfectants are very much in demand, especially in view of the fact that all industries are continually fighting to keep loss of man hours at a minimum.

Guaranteed Germ Killing Power

1. Highest Quality
2. Uniform in Composition
3. Dilutes readily in water
4. Forms rich, milk-white emulsions
5. Leaves no oily float or sediment

Pine Oil—Coefficients 2-5 inclusive

INSECTICIDES . . .

Perfumed Liquid, Grades AA, A, B
Odorless Liquid, Grades AA, A, B
Cattle Spray, Grade AA
Fly Spray, Perfumed, Grades AA, A, B
Fly Spray, Odorless, Grades AA, A, B
Roach and Ant Powder
12—1 lb. cans to case

Note: Our disinfectants and insecticides are packed in 55 gal. drums. Also available in 5 gal. cans and 6—1 gal. to case.

NATURE GAVE THE INSECTS TO US, BUT THAT'S NO REASON WHY THEY SHOULD LIVE WITH US. Insects are carriers of disease and inflict costly damage. Our Insecticides are formulated to kill and they do just that.

For a complete description and prices of our many products please refer to our new illustrated catalogue. If you have not received your copy, advise us and we will gladly forward same.

CHEMICAL MANUFACTURING Co
AND DISTRIBUTING
SIXTH & BUSHKILL DRIVE . . EASTON, PA.

THE DISGUISE MUST BE PERFECT★

Do not accept the lesser of two evils in your insecticide. It is just as detrimental to have an obtrusive perfume that forgets to fade as an invincible killer that refuses to be masked. We have solved the disguise problem for many manufacturers—we would like to do the same for you.

★ Send us a gallon of your product *unperfumed*. Before we send it back, with our compliments, it will be perfectly disguised.

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVENUE · NEW YORK, N. Y.

JOHNNY PYRETHRUM is a good soldier—he responded as soon as he got his 1-A card.

He probably will not have a furlough at home for the duration, because it is his duty to kill off those malaria-carrying mosquitoes in combat areas overseas.

Maybe he will get a medal for his devotion to duty—and return a hero. His record so far is commendable.

In the meantime, pyrethrum production is being stimulated and encouraged, and perhaps the scarcity may not continue as long as the present situation indicates.

S. B. PENICK & COMPANY

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Chicago 10, Illinois
Telephone: MOHawk 5651

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Buy War Bonds and Stamps — for Victory

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

Contented *Bossies* make Happy *Bosses*

DIRO (DWS) Water Base Insecticide

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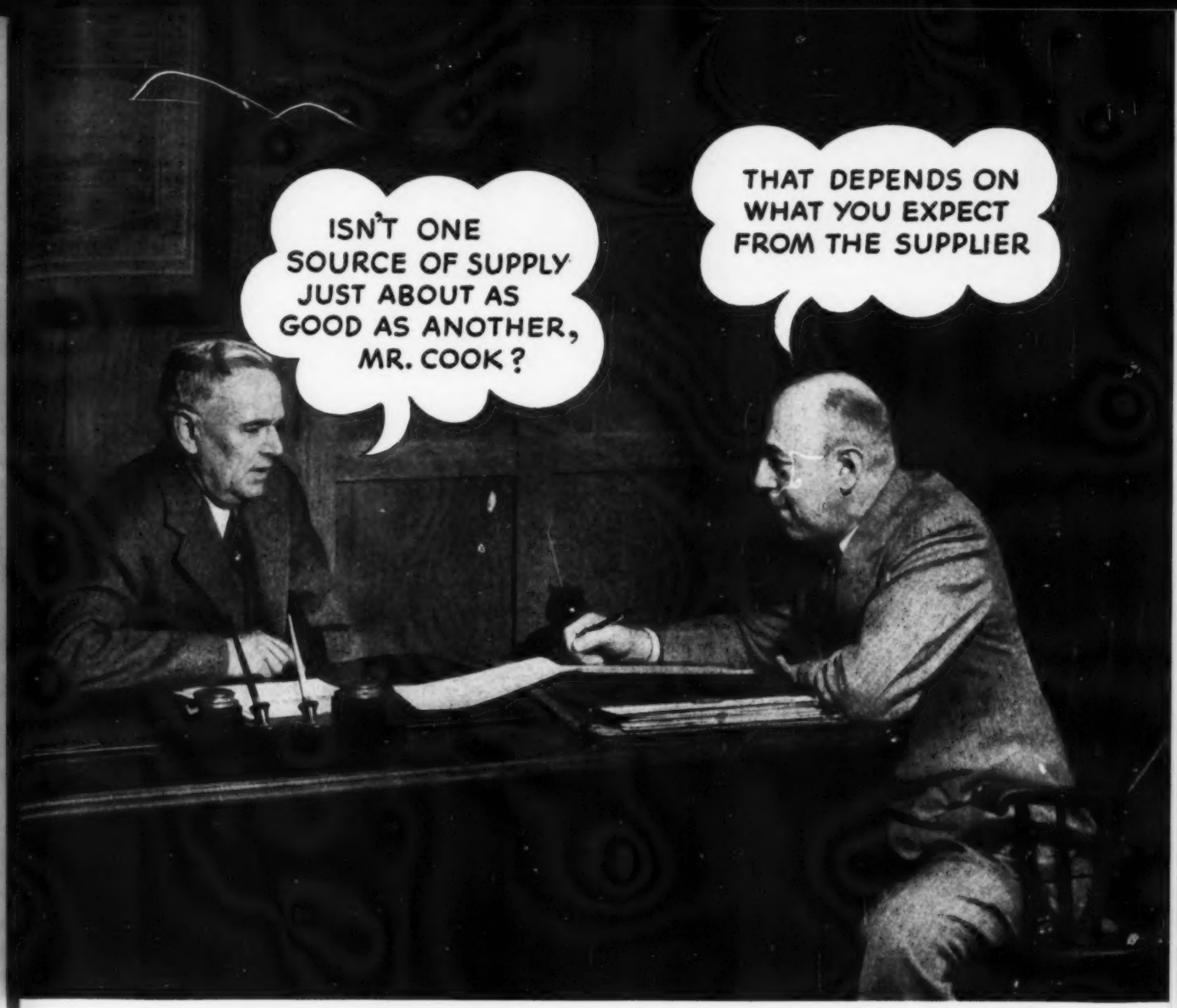

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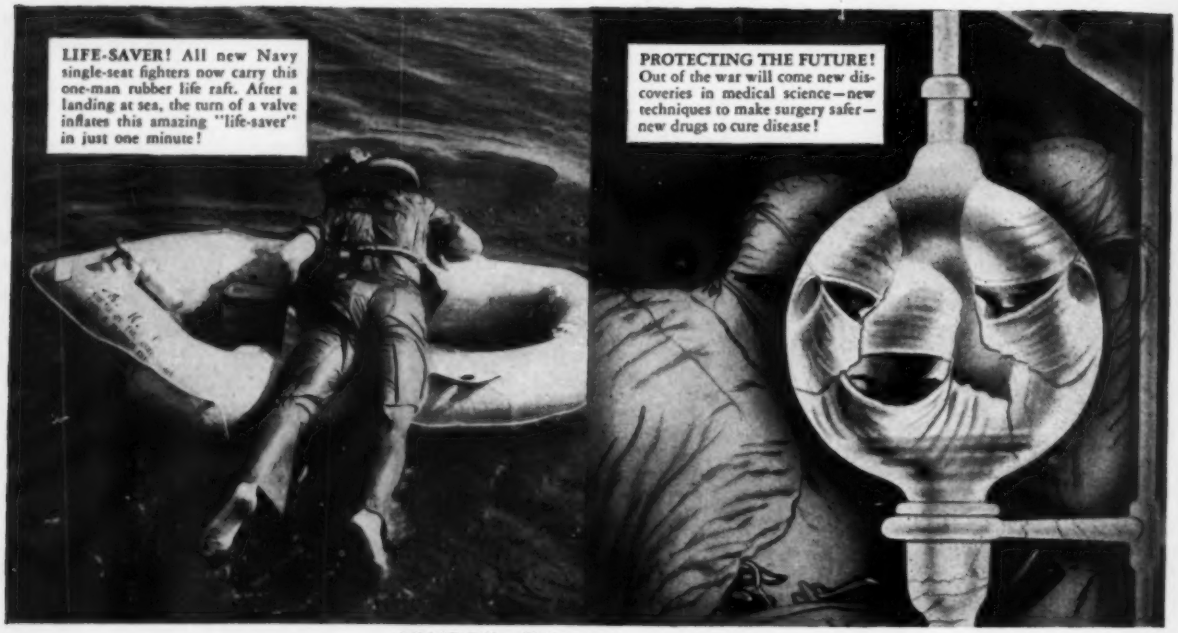
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SANITARY PRODUCTS

their manufacture, testing and use

By Leonard B. Schwarcz

CONTENTS

Sanitary Products Industry — reviewing the type firms in the industry, the products they manufacture, and their annual value.

Discovery of Bacteria—historical background on the germ theory of infection.

Principles of Disinfection — the role of chemical preparations in disinfection; definition of disinfectant terms.

Coal Tar Disinfectants—a review of their manufacture and use.

Cresol Compounds — Liquor Cresolis Compositus, B.A.I. Compound, petroleum-type cresylics.

Pine Oil Disinfectants—manufacture, properties and uses.

Hypochlorites—manufacture, properties and uses of chlorine disinfectants.

Formaldehyde—its applications in the disinfectant field.

Oil Soaps—manufacture, sale and use of jelly soaps, green soaps, auto soaps, floor scrubbing soaps, etc. Special attention is given to manufacture of oil soaps from fatty acids.

Liquid Soaps—The case for liquid soaps for washroom use. A review of raw materials, manufacturing methods, use, etc., with special attention to the problems of clarity, concentration, dispensing equipment, etc.

Soap Dispensers—a review of the common types of liquid and powder soap dispensers, push-in, push-up, tilt, goose-neck, pullman, etc.

Floor Waxes—A review of raw materials for floor wax manufacture and a study of manufacture and application of liquid waxes, paste waxes, water-emulsion waxes.

The Insect Problem—A review of the general role which insecticides must fill in man's battle against the insect world.

Pyrethrum Insecticides—The important place that pyrethrum has taken in the manufacture of non-poisonous insecticides. Manufacture, testing and use of pyrethrum insecticides are reviewed.

Rotenone Materials — Occurrence and toxicity of rotenone, and its use as an insecticidal raw material. Comparisons with pyrethrum on toxicity and deterioration.

Synthetic Insecticides—The most complete review yet published of the chemical nature, characteristics, and use in insecticides of a dozen synthetic materials.

Activators—The action of activators in stepping up insecticide toxicity. A study of activators which are in current use.

Roach Control — Roach powder formulation. The role of sodium fluoride and borax.

Bedbug Liquids—Control methods and special preparations.

Livestock Sprays—Manufacture and use of cattle sprays, with particular emphasis on repellency, application and choice of oil base.

Sprayers—A review of hand, continuous and electric types. Applicators for aerosols are also discussed.

Moth Preparations — Use of paradichlorbenzene, naphthalene, cedar preparations, etc., in moth control. Cautions on labeling.

Deodorant and Urinal Blocks—Para vs. naphthalene blocks. Pressed vs. molded blocks. Perfuming. wrapping, etc.

Labeling and Packaging—The most complete review ever published of the obligations of the sanitary products manufacturer under the Insecticide Act of 1910, The Caustic Poisons Act, The Federal Trade Act, the Food, Drug and Cosmetic Act and the various state laws. Typical decisions of the AMA and the FDA in reviewing offending labels are presented, along with sample labels of approved content.

Appendix—Complete text of Insecticide Act of 1910, Caustic Poisons Act, Peet-Grady Test for Insecticides, FDA Method for Disinfectant Testing, Mercury Reduction Method, Seil Method, NAIDM Specifications, list of approved antidotes.

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SANITARY PRODUCTS

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

SUPPLIES of rotenone materials during 1944 will not be as large compared to 1943 as we indicated in the last issue. Our statement that "supplies of rotenone-bearing roots for the United States next year will probably be four to five times as great as in 1943," was quite evidently too high. Our error grew out of the fact that in the midst of Washington sobs and tears over the plight of rotenone this year, we were dumb enough to believe some of the figures which we heard, and consequently estimated 1943 rotenone imports far under what they have been.

If there are those who were misled by our optimistic mistake, we hasten to set their minds straight. At the same time, we should like to point out that the powers-that-be in Washington are very secretive about giving out information on rotenone or allied materials. To the select few who are invited to attend various and sundry "meetings" there, the facts are generally available. But as far as the rank and file of the insecticide industry are concerned,—well, they can go jump in the nearest lake. Military secrecy has been the usual threadbare excuse for lack of information that might be published for the benefit of the whole industry,—not restricted to a select few,—but in the case of insecticide materials, this reason is plain rot. An informed industry is an industry much better equipped to meet the insecticide demands of a nation at war. Facts supplied directly to the trade press offer the best means for avoiding the publication of inaccurate reports.

And now to get back to rotenone,—we have it from a few factors in the trade that the likely imports of roots in 1944 will probably amount to something over four million pounds on a basis of five per cent rotenone. This figure is about a half-billion pounds above the estimated total for 1943,—and not four or five times as much.

WHAT'S ahead for the insecticide and disinfectant industry? If we knew what were going to happen over the next five or ten years, plans would be easy to make. But we do not know, and any plans must of necessity be based on speculation. Nevertheless, speculation is better than no thought at all and might conceivably save an industry many a headache in post-war readjustments. It is our feeling that after the war, competition between individual firms, particularly in disinfectants and insecticides, will be much subordinated to competition between industries and groups of industries. If through planning now, the industry as a whole may guide its path to better products and better markets, each firm is likely to benefit more than by working out its own salvation. Accordingly, we hope that over the next year, the National Association of Insecticide & Disinfectant Manufacturers will see fit to give increased attention to open discussions on the future of the industry, its products and its markets.

War and Post-War Problems Up at N. A. I. D. M. Meeting

• Raw material and container shortages basis of symposiums.... Hear Appley on manpower situation. . . . Post-war markets and plans discussed.... Army insect control, food protection, moth products, cattle sprays, coal-tar materials, Washington situation on program. . . . Two-day meeting, Dec. 6 and 7.

A. W. MORRISON
in charge of program

GORDON M. BAIRD
2nd Vice-President

CURRENT problems of manufacture and raw materials for insecticides, disinfectants, and allied chemical specialties, as well as post-war problems, comprise the major part of the program for the 30th annual meeting of the National Association of Insecticide & Disinfectant Manufacturers being held December 6 and 7 at the Hotel New Yorker, New York. In view of the war-time nature of the discussions, the meeting has been declared open to all members of the industry who may care to participate and an attendance of about 300 representatives of firms in the trade is indicated from advance registrations. At the opening session, John N. Curlett of McCormick & Co., Baltimore, president of N.A.I.D.M. paid a tribute to the insecticide and disinfectant industries for the part which they have played in the war effort of the past two years and the manner in which shortages and stoppages of raw materials have been overcome. H. W. Hamilton of the White Tar Division of the Koppers Company, secretary, outlined the work of the association over the past year, probably the most active in the 30-year history of N.A.I.D.M.

Post-war planning discussions made up a large part of the opening session of the meeting. Melvin Fuld of Fuld Brothers, Baltimore, spoke on "Post-War Preparation," and was followed by L. N. Markwood of the U. S. Department of Commerce on "Post-War Markets." A symposium on the container situation was then held with J. L. Brenn of the Huntington Laboratories, Huntington, Ind., as discussion leader and various experts giving their views on the outlook in glass, steel, wood and paper packaging materials. W. E. Braithwaite of the National Bureau of Standards spoke on "The Glass Container Simplification Program." At a group luncheon, L. A. Appley, Executive Director of the War Manpower Commission, Washington, is scheduled to speak on "Allocating Manpower."

Other speakers listed on the program include P. H. Groggins, chief, Chemicals and Fertilizer Branch, War Food Administration, on "Protection of Foods," John A. Rodda, chief, Insecticide and Fungicide Unit, WPB, on "Supplies of Raw Materials," and Lt. Col. Arthur P. Long, Surgeon General's Office, Washington, on "The Army Insect Control Program." A symposium on insecticide raw materials led by Charles E. Smith of the Socony-Vacuum Oil Co. assisted by six other speakers, one on disinfectant

HENRY A. NELSON
1st Vice-President

materials led by Dr. E. G. Thomssen of the J. R. Watkins Co., Winona, Minn., with seven other speakers, and a third on floor waxes led by G. A. Bowden of American Home Products Co. with four speakers are on the program.

A feature of one session is to be a demonstration and address by Sterling W. Mudge of the War Manpower Commission on "Training Within Industry for Greater Production." Other speakers will include L. A. Schlueter of the Coal-Tar Products Unit, WPB, John B. Glenn, president of the Pan-American Trust Co. on "Post-War Opportunities in Latin America," Asst. Surgeon General G. A. Dunnahoo of U. S. Public Health Service on "Insect Control in Public Health," Dr. H. A. Shelanski of Smyth Laboratories on "Animal Toxicity Tests."

Group luncheons are being held on each day of the two-day meeting with a speaker at each. An informal reception and dinner will close the meeting on Tuesday evening, December 7. The program is in charge of A. W. Morrison of the Socony-Vacuum Oil Co. assisted by Charles Opitz of John Opitz, Inc. with registration in charge of Treasurer John Powell of John Powell & Co.

Meeting Program

Monday—December Sixth—
Morning Session
John N. Curlett, Presiding

Registration.
Adddress of President—John N. Curlett, McCormick & Co.
Report of Secretary—H. W. Hamilton, Koppers Co.-White Tar Division.
Appointment of Committees.
Election of Nominating Committee.
Roll Call and Introduction of Guests.
"Post-War Preparation"—Melvin Fuld, Fuld Bros.
"Post-War Markets"—L. N. Markwood, Bureau of Foreign and Domestic Commerce, U. S. Dept. Commerce.

SYMPOSIUM—*CONTAINERS*
Discussion Leader: J. L. Brenn, Huntington Laboratories, Inc.
"Glass Container Simplification Program"— W. E. Braithwaite, National Bureau of Standards, U. S. Department of Commerce.
Miscellaneous Committee Reports.

GROUP LUNCHEON
Guest Speaker at Luncheon

"ALLOCATING MANPOWER"—Mr. L. A. Appley, Executive Director, War Manpower Commission.

Monday—December Sixth—
Afternoon Session
John N. Curlett, Presiding

Report of Insecticide Scientific Committee—General Chairman: Dr. A. E. Badertscher, McCormick & Co.
"Mothproofing Investigations"— F. W. Fletcher, Dow Chemical Co.
"Cattle Spray Tests"—F.C. Nelson, Stanco, Inc.
"Army Insect Control Program"— Lt. Col. Arthur P. Long, Army Service Unit, War Department, The Surgeon General's Office.
"Supplies of Raw Materials"—John A. Rodda, Chief, Insecticide and Fungicide Unit, War Production Board, Washington, D. C.

SYMPOSIUM—INSECTICIDE RAW MATERIALS
Discussion Leader: C. E. Smith, Socony-Vacuum Oil Co. Assisted by C. R. Cleveland, Standard Oil Co. (Indiana), Victor Froelicher, Geigy & Co. H. R. King, R. J. Prentiss & Co. Eric Meyer, L. Sonneborn Sons. D. F. Murphy, Rohm & Haas Co. Friar Thompson Jr., Hercules Powder Co.

"Protection of Foods"—P. H. Groggins, Chief, Chemicals and Fertilizers Branch, Office of Materials and Facilities, War Food Administration, Washington, D. C.
"Washington Situation"—John D. Conner, N.A.I.D.M. Washington Representative.
Report of Legislative Committee—C. L. Fardwell, McCormick & Co.

Tuesday—December Seventh—
Morning Session
Henry A. Nelson, Presiding

Committee Reports.
REPORT OF NOMINATING COMMITTEE.

SYMPOSIUM—*DISINFECTANTS*
Discussion Leader: E. G. Thomssen, J. R. Watkins Co. Assisted by: M. B. Turner, Dow Chemical Co. A. Cade, Givaudan - Delawanna. F. U. Rapp, Hercules Powder Co. J. H. Carpenter, Koppers Co. J. D. Fleming, Monsanto Chemical Co. P. G. Bartlett, Rohm & Haas Co. B. G. Philbrick, Skinner & Sherman Inc. E. G. Klarmann, Lehn & Fink Products Corp.
"The Tar Acid Supply and Distribution"—L. A. Schlueter, Coal Tar Products Unit, WPB.
"Post-War Opportunities for Trade in Latin America"—John B. Glenn, President, Pan American Trust Co.
"Insect Control in Public Health"—Assistant Surgeon General Gilbert A. Dunnahoo, U. S. Public Health Service, Washington, D. C.
Report of Disinfectant Scientific and Standards Committee—Dr. E. G. Klarmann, Lehn & Fink Products Corp.

GROUP LUNCHEON
Guest Speaker at Luncheon

"FOOLOSOPHY and FACTS"—John L. Davis, A.B., B.D., D.D.

Tuesday—December Seventh—
Afternoon Session
John N. Curlett, Presiding

"Animal Toxicity Tests"—Dr. H. A. Shelanski, Smyth Laboratories.
"Training Within Industry for Greater Production"—Sterling W. Mudge, District Director, State of New York, T.W.I. Service, WMC.

SYMPOSIUM—*FLOOR WAXES AND POLISHES*
Discussion Leader: G. A. Bowden, American Home Products Co. E. G. DeLaney, Stroock & Wittenberg Co. Melvin Fuld, Fuld Bros. R. B. Trusler Davies-Young Soap Co.

Report of Resolutions Committee.
Election of Officers.
New and Unfinished Business.
Final Adjournment.

A Tribute to the Insecticide Industry

*By John N. Curlett**

McCormick & Company

AS THE National Association of Insecticide & Disinfectant Manufacturers convenes for its 30th annual meeting, we are aware that tomorrow, December 7, marks the second anniversary of the bombing of Pearl Harbor. Since that time, many changes have taken place in our various individual businesses. As problems growing out of the war have arisen, we at times have felt that they were insurmountable. When we reflect on the changes which have occurred, we realize that each of us has had a part to play in this world conflict and has been playing that part. And when we take the yardstick and measure our contributions and compare them with those of the men on the actual firing line, we realize that it was a privilege to make the very adjustments which seemed so unbearable at the time they were made. Today, we continue to make new adjustments as conditions change, taking them in our stride as a matter of course.

Difficult as it was at first to realize that it would be necessary to conduct our businesses under governmental restrictions, when it was fully appreciated by all that our products were of paramount importance to the war effort, we not only were willing to operate under governmental control, but as an industry, cooperated with the various agencies of the government to see that our essential products were distributed where they would do the most good.

I want to pay tribute to the insecticide industry and especially to its WPB Advisory Committee. This group has labored earnestly and hard in an endeavor to keep the government

informed and in a position to secure needed war requirements.

As we all know, "it's an ill wind that blows no good." This has certainly been true in our industry. The basic raw materials on which the insecticide and disinfectant industry were established have been commandeered for the duration, but true to the spirit of this group, as well as the American people, substitutes have been produced and developed which are filling the war gap for both war and civilian uses. The future of these substitute products rests in the hands of their creators through continued development and research in the post-war period. Their splendid efforts will be rewarded in proportion to their ability to meet a definite public need.

We can be proud of the part the insecticide and disinfectant industry has played as manufacturers in the development of many new products. This industry has rendered a valuable service to our armies and to our people. Our research departments have cooperated with the various governmental agencies working on specific problems. In many instances royalties have been waived in order to supply our products to the armed forces at a minimum cost. No stone has been left unturned in an endeavor to supply knowledge or products both of which have been sorely needed in the prosecution of this total war.

The importance of insecticides and disinfectants has been established during the past two years as never before. Millions have learned the value of sanitary living conditions and the dreadful impact of epidemics through insect infestation. New fields have been opened for the development of both the insecticide and disinfectant industries.

I am particularly happy, in leaving the presidency of this association, to know that our membership is at its peak. I feel that we have learned the meaning of the word "cooperation." We are presenting a united front and we all have but two objectives; first, to win the war and second; to maintain the health of our people at home; both noble causes and the type of enterprise which builds for lasting unity through genuine public service.

These past two years have been busy ones for all. My appreciation for the splendid support which has been given must go to every member of our association; particularly to the officers, the various committees and the executive office staff. I feel that through their cooperation the membership of this group has been kept well posted and has been placed in a position to know what was going on. It is only through the cooperation of our entire group that this has been possible.

There's a saying, "There's nothing deader than a past president" and inasmuch as tomorrow I will fall in that category I do reserve the privilege, while I am still alive, to express a wish for the future of this association and I think it is best expressed by Abraham Lincoln who was making a personal comment, but certainly it can be applicable to an association as

(*Turn to Page* 143B)

* Address of the President before 30th annual meeting, Natl. Ass'n. of Insecticide & Disinfectant Manufacturers, New York, Dec. 6, 1943.

Post-War Problems Threat to Industry

*By H. W. Hamilton**

White Tar Division, Koppers Company

SINCE we last met, industry problems have arisen in quick succession. Federal orders have been followed by new orders, revised orders, amended orders, interpretations and rulings. The Association office has issued 138 bulletins during the year. Until the end of this War and for sometime thereafter, these federal agency orders must be expected and dealt with. Each major development by our armed forces affects our personal and business life. These conditions change daily and changes must be met as they occur, spedily, promptly and completely, but above all,—speedily.

Because of these constant changes, there develops the ever varying problem of available commodity supplies. New federal agency orders or directives must be issued in keeping with these variations. It is the function of a trade association to watch these changes as applied to its particular field, notify its members of the federal agency action and as far as possible supply the often needed interpretations. The association must also be ready to protest the issuing of any unneeded, unjust or unfair orders or rulings. This we have attempted to do. It has been interesting, and I trust helpful to the members of N.A.I.D.M.

When the advice of the Association has been sought by any agency or bureau, the available facts have been supplied, as well as estimates and statistics based on information supplied by the membership. An effort has been made to impress upon all in Washington the fact that the greater part of our products are used for the protection of food after its production and before it is consumed,

and for the protection and promotion of the general health of the population. No greater evidence of this need be found than that the armed forces have almost completely used for health purposes large portions of the available supplies of many of our basic raw materials. But our industry continues active, and by careful planning and substitutions, is not only carrying on, but advancing.

State legislatures have not been very active this year. A digest of state laws of particular interest to our members is now in the process of preparation. There is considerable discussion of the "coloration" of economic poisons as may be required in some states and by the Federal government. An effort is being made to keep these proposed laws uniform in character and reasonable in scope. In this work, your officers and committees are working closely with other trade associations interested in such laws. It can be expected that this type of legislation will be on many legislative calendars during coming years, and some action is certain to result. Mention has been made of the possibility of a completely new Federal Insecticide Act.

Post War planning is a constant subject of conversation and thought. Meetings on this subject have been attended by a representative of this association. Only a brief summary of some of the discussions can be given here. Vast upheavals and readjustments of business are feared. Conditions after World War I are cited. World War I did not so completely disrupt world trade as World War II. It was not a global war, and it involved far less of our own people and the armed forces for a much shorter period of time. These are vital factors and obviously the coming post-war period will be affected by them. Because of the wide differences between World Wars I and II, it is dangerous to assume that the same rules will apply in the coming post-war period that applied after the previous war.

Why is this true? Because our participation in this war is for a longer period of time and on a larger scale. We have more completely drained our stocks of durable goods and luxury products. It will take time, labor and materials to replace normal stocks. Again, our tremendous combat machine cannot be demobilized quickly. It is widely scattered and the end of hostilities will not mean the end of vigilance. Demobilization probably will be much slower than after the World War I, and the reabsorption of our armed men into the economic life will be accomplished quite easily with only a few isolated areas developing serious problems. The demobilized men must be given first consideration.

Other factors which will be of benefit in the post-war period and which did not exist in the previous similar period are social security and unemployment insurance. These forms of insurance will most certainly act as a buffer to some extent.

Just as this war involves more of our people on a larger scale, over a greater area, at a previously unheard

(*Turn to Page* 143B)

* Annual report of the secretary, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec. 6, 1943.

The story behind the **thanite*** *story...*

High kill at low cost—that's the Thanite story in five words. Experience by the industry over the past two years, and the results of an exhaustive test-program, have led to specification of Thanite-based sprays by the U. S. Army, for Lend Lease, and acceptance for many essential civilian uses.

Production of Thanite has been stepped up tenfold during this year alone. Orders, however, have grown even faster, and are still well ahead of shipments.

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But continuing increases in production are closing the gap between orders and shipments at a rapid rate. As we see it now, the Thanite you have on order with us should be on its way to you in time for the 1944 spray season.

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INSECT FOOD DAMAGE

By

Virginia Anne Fairfield

Food Distribution Administration, U. S. D. A.

INSECTS are true saboteurs. Their main objective is our food supply, — in field, in process, in storage. That they reach it and take it is proved by the fact that each year they destroy an estimated $1,423,948,000 worth of food. Rats do plenty of damage too. Their annual score is $189,000,000. Total damage due to insects and rodents runs to over $2,000,000,000 worth of food,—food we can ill afford to lose. Measured against the cost of food consumed in the United States last year, food costing at retail $27,400,000,000, it's easy to see that together they destroy 6 to 7% of our food supply, the same amount we lend-leased to all our Allies last year.

In peace time these figures would be bad enough, but in war time they can't go on. They must be cut! The food these pests destroy may mean the difference between life and death for many. An army or civilians are no better than the food they eat and every particle counts.

A sidelight on the war food problem,—reducing annual two billion dollar food loss due to insects and rodents

In the last war, large quantities of wheat stored in Australia were destroyed by the wheat mite. In World War 2, this insect is at work again on stores both in the United States and Canada. But the wheat mite is only one of many insects causing food loss. The rice weevil destroys an estimated $60,000,000 worth of stored cereals annually. The corn earworm accounts for $98,268,000 worth of corn, tomatoes, and cotton each year. The boll weevil takes a toll of 1,842,000 bales of cotton annually. Almost as bad are the codling moth with 19,000,000 bushels of apples to its credit yearly, the Colorado potato beetle with 22,600,000 bushels of potatoes, the Hessian fly with 17,030,000 bushels of wheat.

Garden crops, stored foods, are not safe either! In the South, the loss in unprotected cabbage from the cabbage caterpillar alone was found to run to 1.3 tons of cabbage per acre. On a per capita consumption basis that amounts to a loss of enough cabbage from one acre to feed 148 persons for a year. In California the loss of tomatoes due to the depredation of the tomato fruitworm amounted to ½ ton of canned tomatoes an acre, enough to feed 125 persons for one year! The pea weevil in Washington, Oregon, and Idaho destroys enough peas in one year in an acre to feed 18 persons. In Birming-

The insecticide manufacturer can make effective use of such dealer helps as posters and window cards to emphasize the importance of insect control in husbanding the national food supply. The role of cleanliness in control, careful storage, the importance of constant vigilance, are logical themes suggested in sample layouts for posters prepared by the U.S.D.A.

Processed Congo Gum

for

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"S & W" Fused Congo No. 5 is finding favor with manufacturers of No-Rub Polishes in conjunction with Carnauba and other waxes.

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The potato beetle is listed as one of the ten most destructive insects from the standpoint of damage it causes. Dusting with arsenic and copper lime controls the common pests that attack the potato plant and increases yield.

ham, Alabama, when the bean beetle first appeared its destruction was so great that one grower received only 15 baskets of beans from one gallon of seed planted, when he normally harvested 150 baskets to one gallon of seed planted.

These are only a few of many. The ten leading insects from the standpoint of the damage they cause are: the boll weevil, the corn earworm, the housefly, rice weevil, cattle grubs, codling moth, Colorado potato beetle, Hessian fly, cotton fleahopper, and the chinch bug. The chinch bug for example, costs us $15,000,000 a year. Over $300,000,000 annually is loss due to the ravages of other insect pests on stored cereals. And, although somewhat beside the point in considering food losses, clothes moths do over $200,000,000 worth of damage per year as an added contribution.

Many of these insects are natives. Some were brought in as stowaways in our food supplies. The immigration of the Hessian fly for instance, dates back to the Revolutionary War. Some of the insect pests got that way because they changed their food habits. Regardless of how they became what they are, the danger of their multiplying is increased many fold by modern methods of transportation.

Insect control is a vital wartime necessity. Manufacturers of insecticides have a job to do. Theirs is the task of seeing that the farmer, owners of grain elevators, food processors, wholesalers, retailers get an honest dollar's worth of the right insecticide when they need it. Farmers must be urged to make frequent inspection of all crops and resort to correct insecticides at the first sign of infestation. The decreased availability of pyrethrum and rotenone in insecticides means that insecticides must be applied where and when they will do the most good, when they will result in control of the maximum number of pests. Manufacturers should be well informed so that they can relay their knowledge through advertising and promotion to their clientele. Farmers should be further educated and told that fresh grain should not be exposed to that which is already infected, to fumigate their

(*Turn to Page* 141)

In fumigation of grain bins a liquid fumigant is used which when sprayed over the surface of the grain evaporates to form a heavier-than-air gas, toxic to pests of stored grain. Many farmers fail to appreciate the importance of fumigating old stocks of grain to prevent their infecting fresh additions to the storgae bin.

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For Household and Industrial Sprays

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For Agricultural Sprays and Dusts

LETHANE 60 is a powerful contact insecticide. This concentrate is successfully replacing a large portion of the rotenone and pyrethrum normally employed in agricultural sprays and dusts.

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FLY CONTROL *in* STABLES

*By R. Wiesmann**

THE disturbances caused by flies every year in the stables of domestic animals are of serious consequences not only for hygienic reasons, but also because of the unfavorable influence of the flies on the milk. According to the investigations of Freeborn and collaborators in Davis, Cal., the loss of a normal production of milk, occasioned by stable flies, may amount to 14 per cent. Stable flies are particularly conspicuous during milking and while caring for the animals. Owing to the constant irritation of these pests cows become restless, ill-tempered, and may be hard to handle.

An effective, feasible, and lasting control of the fly-pest in the stables, particularly of the adults, has not been known heretofore. The object of the present paper is to publish a method of controlling stable flies. This method has many advantages over the old and customary methods and is considerably more effective.

* A translation by Carlo Zeimet, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, of an article entitled "Eine Neue Methode der Bekampfung der Fliegenplagen in Stallen" which appeared originally in *Anzeiger fur Schadlingskunde,* Berlin, Germany. Vol. XIX, No. 1, 1943, pp. 5-8. An insecticide material of similar type is now being made in the United States by Geigy & Co., New York, under the name "DDT."

The Fly-fauna in Stables

SEVERAL of our domestic Muscids, (Calypertidae), commonly known as stable flies, are listed as follows: *Musca domestica, Stomoxys calcitrans, Fannia canicularis* and *F. scalaris, Muscinia stabulans,* and *Liperosia irritans.* Thorough investigations of the fauna of stables of domestic animals show the principal associates of the stable fly to be *Musca domestica* and *Stomoxys calcitrans,* whereas the other forms are considerably less in number. *Stomoxys* frequently predominates.

Stomoxys and *Liperosia* alone are bloodsuckers and for this reason are particularly troublesome to the animals, although some species suck the perspiration and other exudations of the body and they become fairly troublesome by their persistence.

Previous Control Methods

IN Switzerland the control of stable flies heretofore was mainly against the adults and was carried out with the well-known fly catchers or by spraying with liquid insecticides. Flypapers are covered with dead flies within a short time, the glue becomes hard, loses its sticking property, and is thereby useless. Liquid baits as they are employed in foreign countries, are unknown to us (See Schuckmann 1927 and Teichmann 1917).

All these remedies for the direct control of flies in their adult stage have one great disadvantage. Their effect, as for example that of liquid insecticides, is momentary, killing only the flies present in the stable during the spraying. They have no influence upon flies occurring at a later moment. These remedies have no residual value; therefore, if the stables are supposed to be kept free of flies, applications have to be made frequently. The direct control of flies is made very expensive and for this reason is not very popular.

The control of the stable fly has been attempted, in foreign countries by the treatment of the manure, as is shown by considerable literature on the subject. In this connection the infested manure, serving as a breeding place for the flies, has been treated constantly and regularly with various chemical compounds. Nothing has been reported as being particularly successful besides the method of Thomsen in Denmark.

The problem of the control of the stable fly has not yet been solved in a thoroughly satisfactory manner.

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A remedy for the direct control of flies which has a somewhat limited though lasting effect is particularly desirable. This requirement is satisfied to a considerable extent, as will be shown, by a new insecticidal material. It is the plant-protecting agent known as "Gesarol."

"Gesarol" for Control of Stable Flies

"GESAROL" has been developed and put on the market by the firm J. R. Geigy, Inc., in Basle as a nontoxic and effective substitute for the highly toxic arsenical compounds. It proved to be satisfactory in the control of different insects of economic importance in the cultivation of fruits, grapes, vegetables, and potatoes, where it has been introduced. "Gesarol" contains as an active ingredient a complex of hydrogen chloride which according to the manufacturers is nontoxic to man and warm-blooded animals.

Of particular interest is the fact that this remedy is not only effective as a stomach poison, but has also a considerable and lasting effect as a contact poison. In a 1 per cent spraying solution it produces faint spots, which under open air conditions retain their effectiveness for weeks as a stomach and contact poison. The effective substance is very stable in light and air currents, it scarcely evaporates, and is insoluble in water.

Effect of "Gesarol" upon Flies

NUMEROUS tests made on a large scale with extensive fly sprays have shown that the various species of flies, including our common stable flies, are extremely sensitive to deposits of "Gesarol" sprays as compared with the dry deposits of other fly sprays, and are killed within a short time by contact with these deposits.

Of a series of tests in this connection we shall quote one, which proves the great sensitiveness of *Musca domestica*. Covers and bottoms of petri dishes were sprayed with a 1 per cent solution of "Gesarol." After the deposits dried completely we put into each of the petri dishes five flies freshly caught in a stable. After a certain time, during which the flies had an opportunity to come into contact with the deposits, the flies were subsequently transferred to petri dishes which had not been treated and observations were made of the further behavior of the flies.

The following table shows the result of our observations:

Reaction of the Flies (*Musca domestica*)

Time of effect	*Immediately afterward*	*Primary paralysis*	*Secondary paralysis*	*Death*
30 sec.	none	40 min.	6 hrs.	35 hrs.
1 min.	none	10 min.	35 hrs.	8 hrs.
2 min.	none	10 min.	30-35 min.	7-8 hrs.
5 min.	none	10 min.	30 min.	6 hrs.
10 min.	none	10 min.	25-30 min.	5 hrs.
20 min.	none	10 min.	20 min.	3-4 hrs.
60 min.	none	10 min.	20 min.	3-4 hrs.

The results obtained with *Stomoxys calcitrans* were substantially the same. Reactions were somewhat later, but were fatal to this species of flies in approximately the same time.

The tests showed with emphasis that a contact with the deposits for only 30 seconds by the flies was fatal to them after two to three days. A longer contact produced a correspondingly shorter killing rate.

The reactions which take place in the flies are as follows: Adults, after a short time, drag the posterior legs and are soon unable to use their legs coordinately. They turn over with sprawling legs, are unable to fly, and finally succumb. The longer the exposure the sooner severe convulsions take place, followed by a quicker death. Since the dried "Gesarol" deposits upon the glass retain their potency for at least three months, we may speak of the prolonged effect of this material.

The Effect of "Gesarol"

AN explanation of the peculiar effect of "Gesarol" upon the flies is principally as follows:

The dry deposit of "Gesarol" shows an intensive contagious effect. The material affects the insects as a powerful toxin to the nervous system. As the flies have their chemo-tactic sensorial organs in the tips of the tarsi, the finely distributed deposit comes into direct contact with these important sensorial organs of the flies walking on the deposit, and they are adversely affected. Consequently paralysis of the nerves takes place, the first symptoms of which are observed in their legs. The injury to the nervous system, which increases rapidly, soon leads to the fatal end of the flies.

On the basis of a great number of preliminary tests, the marked sensitiveness of the flies, with regard to the dried deposits of "Gesarol," has been utilized in the control of flies in stables. If stable flies prove to be as sensitive to this material as the flies tested, and if the spray deposits show a lasting effectiveness, then a spraying of the stables with "Gesarol" must result in prolonged automatic control.

Flies do not constantly settle on the cattle or horses, but rest, especially during the night, mainly on the walls and ceiling. They come, therefore, into close contact with the spray deposit and are killed in this way. Consequently stables can be maintained practically free from flies for a longer time. "Gesarol" may be applied without hesitation in stables owing to its nontoxicity to man and warm-blooded animals.

On the basis of these considerations we sprayed on June 10, 1942 a small horse stable and on June 20 a cow stable with ten cows and two heifers with a 1 per cent solution of "Gesarol" and applied it thoroughly to all the walls and ceilings. We subsequently observed daily the infestation of these stables by flies. In the cow stable the animals were kept there during the treatment.

The particularly interesting results obtained in the cow stable, which had a sprayed surface of 180 square meters, are discussed in detail.

Adjacent to the stable there was a large manure pile, in which enormous numbers of broods of *Musca* and *Stomoxys* were found, so that we

(*Turn to Page* 141)

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AGRICULTURAL INSECTICIDES

A review of recent reports of various State Agricultural Experiment Stations indicates the direction currently being taken in studies on agricultural insecticides. Much work is reported being concentrated on finding effective substitutes for insecticides in short supply, and development of application techniques that will make more economical use of such supplies as are available.

INSECTICIDE research at the various state agricultural colleges has recently been largely influenced and directed by the shortages or prospective shortages of standard control materials. Entomologists have in many instances been forced to subordinate (although not to abandon entirely) long-time research projects, in favor of the immediate three-fold problem of finding effective substitutes for the critical insecticides; testing out methods that would be economical of materials and labor, yet still give adequate control; and helping the farmers to apply this new knowledge.

The Victory Garden program also introduced the problem of adapting to home garden use recommendations covering use of insecticides worked out for large scale growers. And, in another direction, entomologists have been forced to divert much of their attention to studies of various species of plants reported to possess insecticidal properties which might be cultivated on American farms to provide new sources of insecticide materials. These trends are revealed by an examination of nearly two score annual reports covering recent activities of the various State Experiment Stations.

On the whole the various investigations of substitutes for insecticides of long standing use have evoked little enthusiasm from the researchers. Says, for example, the report of the New York State Agricultural Experiment Station at Geneva, N. Y.:

"In view of the shortages and increasing costs of pyrethrum and rotenone insecticides, tests were carried out with two proprietary substitute mixtures, one a cryolite product and the other a rotenone-thiocyanate mixture to determine their effectiveness in the control of various cabbage caterpillars on cauliflower as compared with standard pyrethrum dusts of 0.6 per cent pyrethrin content and derris dusts of ¾ and 1 per cent rotenone concentration. In addition tests were made with sprays containing pyrethrum powder and others with derris powder at concentrated and standard strengths to ascertain the value, if any, of applying sprays in concentrated dosages using a smaller amount of liquid, as compared with the usual method of using lower concentrations and larger amounts of the mixture.

"The most promising results were obtained with the standard pyrethrum dust mixture (0.6 per cent pyrethrin content) and with a spray containing about 5 per cent rotenone. The latter cost about $5 per acre per application, however. The thiocyanate-rotenone mixture (0.4 per cent rotenone) gave inferior control. In contrast to the superior results obtained with pyrethrum dusts as compared with rotenone dusts, it may be noted that pyrethrum sprays, either at normal or higher concentrations, were inferior to derris sprays."

Other studies at the Geneva station on control of the cabbage maggot were aimed at finding some satisfactory substitute for the scarce and expensive mercurial compounds, but again with qualified approval. "While some of the newer materials tested showed marked value in cabbage maggot control," says the report, "none of them approached the mercurials in efficiency and safety to the crop. Until further work can be done on this problem, the mercurials are still to be preferred, even at present prices."

Petroleum oils have long been used to kill insects but with variable results, even when the oils were of the same viscosity and sulfonation values. This fact prompted an investigation at the Geneva station into physical and chemical properties of oils and their relationship to insecticidal value. Some significant conclusions are drawn and, pending further investigation to find oils showing greater safeness to trees, combined with high insecticidal efficiency, the entomological staff at Geneva developed a formula recommended as "desirable" for dormant spraying.

Their report also calls attention to a new problem—the need for investigation of methods to keep dehydrated foods free from insects.

In Maine, where Bordeaux mixture is much used for control work on the potato crop, the Orono experiment station found that the lime in the bordeaux formula could be reduced 50 per cent, resulting in recommendation of a 10-5-100 formula. Then, viewing the possibility that blue vitriol and fungicides containing copper might become scarce, they studied the possibility that the copper content as well as the lime could be cut without endangering the crop from late blight attack. The results, says the report, "indicate that the copper sulphate in the bordeaux formula may be reduced 20 per cent with no significant reduction in the yield of potatoes."

The Maine station's report describes tests to determine the efficiency of a "Dust-Oil Vapor" fungicide and insecticide, using a "Vapor-duster" machine manufactured by the Root Duster Co., Cleveland, O., to control insects

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and the blight diseases of potatoes. With this equipment the copper-containing dust is forcefully expelled by tractor power into the potato foliage through one set of openings on the spray rig and the oil mist through another set of openings. Varying results on controls and yields were reported. Numerous chemicals, including various commercial products were tested at Orono for their effectiveness in disinfecting cut seed, containers, machinery, storage bins, etc. Critical comments on the efficacy of the various products are included in the Maine report.

In New Hampshire an investigation of the cost of spray materials for apples, based on total amount and volume of the materials applied by thirty-two orchardists over a 5-year period came to a close with these figures: cost per box of apples varied from 1.4 to 15 cents; on 23 of the 32 farms it was less than 5 cents per box; on 17 farms the material cost for an extra "marginal" spray amounted to 1 cent or less.

New Hampshire studies of penetration of oils into insect eggs were continued during the year with this conclusion: "It was found that penetration was accelerated as viscosity decreased, up to a certain point. A rise in temperature accelerated penetration, but beyond a fixed point lower temperatures did not result in correspondingly retarded penetration. A correlation was found between age of the insect egg and rate of penetration of an oil. In comparing two types of insect eggs a marked difference was observed in the rate of penetration, owing, no doubt, to the characteristics of the egg itself."

Continued studies of the epicuticle or upper layer of an insect's body revealed to the New Hampshire investigators that the tomato worm's epicuticle is insoluble in all of a wide variety of solvents tested and is also extremely resistant to heat. Even after heating to 180° C., no visible changes occurred. When the equilibrium angle of contact of water on the epicuticle was determined, it was found to be "within experimental error of the value found for the contact angle of water on paraffin wax."

Application of insecticides to small field test plots is a phase of insecticide research work that has been productive of much data useful in determining the effectiveness of new materials under investigation. In this U. S. D. A. photograph by Forsythe, M. C. Swingle of the Sanford, Fla. Station of the Bureau of Entomology and Plant Quarantine applies a new insecticidal compound to Swiss chard. Leaf samples are cut periodically from the plants and fed to insects in the laboratory to determine the effectiveness and the weathering of various spray deposits.

Connecticut experiment station at New Haven offers a note with reference to the prospective need for reducing use of copper, mercury and formaldehyde in fungicides. "Until recently," says this report, "no one knew the relation of quantity of material to the control obtained, but this has just been learned for some materials. Only half as much copper as yellow oxide, for example, is required for control as red copper oxide. On the basis of these findings the manufacturer is taking red oxide off the market and substituting yellow, in order to give his customers the required disease control with less copper."

Furthermore, says the Connecticut report, "On the basis of research with fruits, vegetables and roses, it is clear that tetramethylthiuram disulfide, ferric dimethyl dithiocarbamate, mercapto-benzothiazole, and tetrachloro benzoquinone will be useful substitutes for much copper, mercury and probably formaldehyde that is now consumed for fungicidal purposes."

At Amherst, Mass., the experiment station made numerous investigations of materials of promising value in insect control, including the effectiveness of dinitro combinations against European red mite in apple orchards. As a result of a test of a commercial product known as "DN-111," the station report says: "DN-111 appears to be a very satisfactory material (for red mite control on Baldwin apple trees) and excellent controls can be expected from sprays containing as little as 12 oz. in 100 gallons."

Another Massachusetts test to determine the possibility of reducing the amount of corrosive sublimate or calomel in treatments for combatting cabbage maggots showed that "two applications of corrosive sublimate at 1 ounce in 15 gallons of water (1-1920) was equal to or more effective than two applications of this material at 1 ounce in 10 gallons of water (1-1280) which is the normally recommended concentration. Calomel-talc dust containing 2 per cent calomel was very nearly as effective as the dust containing 4 per cent calomel (the normal recommendation) when applied by the mound method; but was significantly inferior

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to the 4 per cent dust when applied twice with a hand duster."

IN field tests for control of onion thrips at Amherst, the standard combination of nicotine sulfate and soap "again proved superior to all other treatments, giving 87 per cent reduction of thrips." Continuing, the report on this project says: "A commercial rotenone solution proved nearly as effective and gave greater residual protection. A spray composed of castor bean extractive proved ineffective, largely because of its oily nature and poor wetting qualities. A pine oil derivative in a penetrating soap gave 74 per cent control. Its effectiveness was not materially increased when derris was added. A commercial pyrethrum dust gave 70 per cent control, an excellent showing for dust application and good commercial control. Fixed nicotine sprays were only moderately effective, but a nicotine tannate spray gave 74 per cent effective control. A nozzle adapted to deliver a solid-cone type of spray proved much more satisfactory and gave better penetration than the conventional hollow-cone spray."

The Massachusetts work produced much other significant data concerning non-arsenical compounds as replacements for those subject to curtailment. Further topics briefly dealt with include: investigations on the effect of insecticides on honeybees; naphthalene and similar compounds as greenhouse fumigants; control of red spider mites on greenhouse plants and control of plum curculio on apples by varied amounts of spray.

Maryland station, at College Park, examined some of the newer chemicals, including xanthone, phenathizene, derris powder and a new fixed nicotine concentrate, to determine their efficiency in controlling the oriental fruit moth on a new variety of peach. Two of the materials, xanthone and fixed nicotine concentrate, reduced the infestation from 10 per cent in the check to about 3 per cent in the treated plot, but the cost was high and further work was mapped out to determine the minimum number of applications that will give a profitable return.

Measures for control of corn ear worm and pea aphids, two insects affecting Maryland canning crops, were investigated and other entomological projects included biology and control of tobacco insects, the Japanese beetle and the European corn borer.

Search for substitute insecticidal materials at the Delaware experiment station, Newark, Dela., resulted: (1) in finding that "pine oil and several terpene derivatives are useful in control of insects"; and (2) "the organic compounds from coal tar and petroleum refineries offer possibilities for further substitutions."

Referring to the earlier development at this station of the synthetic derivative, "Thanite," (fenchyl thiocyanoacetate), the Delaware station report says that this work, done under the Hercules Naval Stores Fellowship, "has made possible the commercial production of AA household fly sprays in spite of the lack of pyrethrum." Another project under the same Hercules Fellowship was a study of petroleum oils for mosquito control, the principal point of investigation being the possibility of improving existing oils by addition of naval stores products to increase the spreading coefficient on water surfaces and the resultant kill of mosquito larvae. "Additions of as little as 0.01 and 0.50 per cent of FF wood rosin to No. 2 fuel oil, for example," says the report, "increased the spreading coefficient from 7.7 dynes/cm. to 13.5 and 28.9 dynes/cm., respectively."

Delaware closed out a codling moth control project of sixteen years standing and also completed research of three years on the dog tick. Brief reference is made to final conclusions covering possible substitutes for the standard lead arsenate spray against second brood codling moth larvae and a publication on the dog tick was announced as pending. A new project on insects attacking from woodlots was launched and progress reports made on control of the eastern tent caterpillar and the oak lace bug. Work was also started on development of suitable substitutes for ingredients in sprays recommended for Japanese beetle control.

West Virginia Experiment Station at Morgantown, investigated possible substitutes for copper and mercury compounds and formaldehyde.

(*Turn to Page* 143)

The effectiveness of the aerosol method of insecticide atomization as applied to agricultural insecticide applications is being investigated at the Beltsville Research Center of the U. S. Department of Agriculture. By the time the war is over, and materials called for in this method are once more freely available, the department will have full data on efficacy of the method in control of greenhouse pests. Photo by Knell.

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*By Justus C. Ward**
Wildlife Research Laboratory
Denver, Colo.

Formulation of RAT BAITS

WARTIME shortages of many of the common poisons used in rat baits, together with rationing of many food ingredients, have posed serious problems for the specialist in rodent control. It has become more and more difficult to prepare ideal baits under these conditions and some concessions have had to be made. Let us review briefly the salient points which must be considered in setting out to blend the ideal rat bait formula.

First of all, a rat bait must be palatable, since the animals have to be induced to eat it in preference to other foods which may be present in abundance.

In the next place, the bait must contain enough of the toxic agent to destroy rats eating relatively small amounts.

Then, it should remain attractive long enough for suspicious animals to overcome their timidity and feed on it.

Also, it should contain enough odor to draw rats to the less attractively placed bait spots.

When these specifications are examined it would seem that a bait meeting all of them might be an ideal one, if we could add the characteristics of a specific poison—one which would kill nothing but the animals to be controlled. It has become increasingly difficult, however, to prepare such ideal baits under present restrictions which are severely handicapping our wartime programs of rat control.

The poison situation in the United States is now reported to be improving slowly. It appears that supplies of strychnine, arsenic, zinc phosphide, barium carbonate and phosphorus preparations are assured. Limited red squill shipments from North Africa have reached this country, and it seems probable that the fortified powder will be available eventually for the general trade. On the other hand there is little hope that any large amount of thallium will be available for civilian use until foreign imports are reestablished. Some of the less well-known chemical poisons are on the market in quantities suitable for limited trial, among which are zinc cyanide, barium arsenate, glycerol-monochlorohydrin and phenyl thiocarbamide. The main reason that some of these substances are not used more extensively is that they are not accepted well in any bait combination with which we are familiar. Recent research findings have indicated that several newer chemicals in the synthetic organic field may be extremely useful for rat control.

In addition to acknowledging the fact that many rodent poisons may be available, it is a matter of satisfaction to be able to report that intensive researches are now underway to find and test new substances which may be more effective, or cheaper, than those now in use. This project has been made a major one in the Wildlife Research Laboratory for the duration of the war.

Accordingly, it would seem that our wartime rat bait problem is associated as much with lack or shortage of food items as with restricted lethal agents. It is repetition to state that rats vary so much in food preferences that any list of baits in order of average acceptance will mean very little to the pest control man who has a specific problem and needs a particular bait to help him solve it. In gen-

* Before Natl. Pest Control Assn., St. Louis, Oct. 26.

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eral, however, rats will eat all of the three major food types—proteins, fats and carbohydrates, and an endless variety of baits may be prepared from mixtures of these elements. Wartime rationing has reduced the availability of such attractive foods as ground beef, canned fish, fresh fat, vegetable oils, various preserved vegetables and fruits, and in short most of the better rat bait ingredients. Even though this picture has been modified somewhat by industrial rationing of limited supplies of certain items for use in rat bait, it is still quite desirable to develop formulas which do not use rationed foods. This laboratory has been making studies along that line, so for a moment let us consider some specific bait formulas of that type.

In the first place, ground horse meat has proved to be an acceptable substitute for beef hamburger, and for operators who live near areas where fur farms are common, this product can be obtained quite readily. Its general distribution for use in pet foods is increasing, and it should be possible soon to find horse meat in any of the larger cities at stores serving that trade. It is used successfully as the horse "hamburger" mixed with 10 per cent fortified red squill powder, 2-3 per cent white arsenic, 1½ thallium, 1 per cent zinc phosphide, and ½-1 per cent of some of the newer research poisons. Such baits are highly perishable, however, and must be mixed quite shortly before being placed. A modification of this 100 per cent meat type bait is one which contains from 50-75 per cent ground meat and 50-25 per cent of a cereal such as bread crumbs, cracker crumbs, corn meal, or oat meal used to absorb some of the moisture in the meat. Such a combination will remain good much longer, which will permit bait manufacture several hours ahead of the time it is to be used. These formulas seem to be accepted practically as well by the rats as straight meat.

Where animal proteins, such as fresh meat, are entirely unobtainable, there are certain vegetable proteins worthy of trial. One of these is the material called "soybean lecithin," which is available in a wide variety of forms, varying in purity from a crude "tank settling," taken from the bottoms of soybean oil processing stills, to a refined substance suitable for use in candy and other human foods. Curiously enough rats prefer tank settlings as long as they are not rancid. A typical formula using this material is prepared by warming one-half pound of tank settlings with one-half pound of mineral oil until a smooth solution has been formed. One pound of fortified red squill powder is then mixed with the oil and added to eight pounds of bread or cracker crumbs. Peanut butter is another plant product high in protein, with which most rat poison manufacturers and users are familiar, and we have used it in many of our wartime formulas with good results.

In most sections of the country, fresh fish are still on the market—at least at frequent intervals—and this protein is used to good advantage in rat baits. It must be handled in the same way as that described for horse meat, since the product is extremely perishable. One of our most satisfactory formulas is made by grinding two pounds of fresh fish (preferably halibut) and mixing that with seven pounds of poultry rolled oats or bread crumbs and one pound of fortified red squill. Since the cereal is added for the purpose of making the bait last better, its proportion may be adjusted to suit the conditions under which the bait is to be used.

Fats in general are more difficult to obtain under present conditions where fresh animal fats are either left on the "ham" or salvaged for munition manufacture, and vegetable oils are stringently rationed. Due to the rather general use of fresh pork fat in some of our most widely used formulas, it seems justifiable to assume that industrial rations would permit most firms to acquire small supplies. As a typical formula, two pounds of fresh pork backfat is ground and mixed with one pound of fortified red squill powder. This is then blended with seven pounds of bread crumbs, and three ounces of cod liver or sardine oil are added. Many different fish oils have been used in various experimental products, and a curious observation has been made. It is easy to use too much. Five per cent of most of the oils caused a definite detrimental effect on acceptance. Even though fish oils are food elements, it seems that they are valuable in rat baits primarily for their "lure" value. As a consequence of the fat and oil shortage, more attention is being paid to the unrationed plant oils such as peanut, linseed and soybean oils. Raw linseed oil, when present in from 3-5 per cent of the weight of the entire bait, has given good results. Peanut oil is inferior to peanut butter, and the same thing is true of soybean oil being less satisfactory than soybean lecithin.

In the field of carbohydrates such products as sugars, syrups and jellies are being used as additive ingredients only, and not as major portions of any baits. Research on these products has not been extensive so no conclusive statements can be made.

BAITS which are composed of natural products containing mixtures of the three major food elements have been in use for many years. Fresh foods, such as cantaloupes, sweet potatoes, grapes, apples, lettuce, tomatoes and the like, make highly attractive baits when used under the proper conditions, and because of their easy availability are being used more and more widely. White bread, which is a blend of all the major elements, has proved to be one of the best rat poison carriers. Recent observations made first by a representative of the pest control industry, have suggested the need for specifications as to what is acceptable white bread. Experiments have shown that the stream-lined wartime bread is much less attractive than was the old prewar variety. The quality of the ingredients, and baking technique have both been varied as war shortages of food substances and manpower developed. And the rats have noticed the difference—and do not seem to like the change. The answer to the problem from the practical viewpoint is to buy bread on specification—probably at a premium—from the smaller bakeries which can afford to do such specialty business.

(*Turn to Page* 143B)

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LIVESTOCK INSECT CONTROL

A Study of insects which attack livestock and means for their practical control

Part II

By Dr. E. G. Thomssen and Dr. M. H. Doner

The J. R. Watkins Company

MITES, lice, ticks and other external parasites constitute a very real menace to livestock men and poultry raisers. No class of livestock is exempt from their depredations and each, in general, has its own specific kinds of parasites. Several species, notably the ticks, are large and conspicuous, but the mites and lice are minute and not visible on an animal except on close scrutiny. The scale or mange mites are practically microscopic while adult chiggers, common pests of poultry in the south, are too minute to be seen with the unaided eye. While stock may be infested at any time of the year, these pests become especially bothersome during the fall and winter months, when the animals are confined indoors and the symptoms are more conspicuous. All too often these various external parasites are the unsuspected causes of unthrifty and unproductive livestock.

The extent of damage due to crawling insects on livestock is exceeded only by those insects that invade animal tissues such as the cattle grubs and horse and sheep bots. The annual losses are estimated at close to $97,000,000. Almost 98 per cent of these losses involve poultry alone. Mange or scab mites on cattle and sheep, lice on goats and loss of cattle due to tick fever, comprise the balance of the losses. Producers of market hogs suffer extensive losses from mange. Besides the loss of wasted feed and delayed gains, mangy animals are docked from two to six per cent of their market value. According to Herle, practical sheep men place the annual losses due to sheep ticks at 20 cents per head for mature animals and 25 cents for lambs.

Effect on Stock

THE effect of crawling insects on livestock is probably no more serious than that of flying insects, although animals can protect themselves to some extent from attacks of flying insects by seeking shelter or in guarding vulnerable areas of their bodies. Attack by flying insects is usually intermittent, as for feeding or for deposition of eggs. Not so with crawling insects, many species of which spend their entire life cycle or adulthood upon their host. Exceptions are chicken mites which seek their hosts only at night. Thus it is that stock is almost constantly infested by crawling insects.

Biting lice continually move about over the body but usually confine their activity to particular areas of the body except in severe infestations. Sucking lice, ticks, bedbugs and fleas move over large areas of the body and their movements, along with their feeding habits cause no end of distress to the victims. Affected animals attempt to relieve the intense itching by kicking, stamping or by violent rubbing, scratching or biting which results in the denuding of considerable areas of the body. According to Babcock and Black two mangy sheep (severely infested) spent on an average of 0.04 per cent of their total time responding to the irritation caused by the mites. Scratching occupied about 45 per cent of this time, rubbing about 34 per cent, biting about 21 per cent and tongue play about 2 per cent. These writers state that "the detrimental effect of scabies upon the animal is not due directly to the time consumed in response to irritation" . . . but "mainly to changes in the skin which at times, depending upon the severity of the case, greatly hinder its functions. The effect upon the nervous system of infested animals is manifested by their irritability." Sheep have been known to become completely denuded. The losses in wool and mohair production from this source, along with the actual destruction of the hair by biting lice during feeding, constitute extensive losses.

The irritation caused by mange mites that burrow in the skin is intense. The skin becomes inflamed, wrinkled and covered with nodules and vesicles which, on breaking, discharge serum which gives the skin a moist appearance. In less advanced infections the skin is dry and scurfy-like. Apparently the development of scabies on sheep is not continuous. Sheepmen have often noted mange to die out

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Common Crawling Insects Attacking Livestock

	Name	Duration of Egg Stage	No. days to reach maturity	Av. No. Eggs Deposited
CATTLE	Short-nosed cattle louse (*Haematopinus eurysternus* Nitz.)	11-18	13-23	30-35
	Long nosed cattle louse (*Linognathus vituli* L.)	8-14	11-18	
	Cattle-biting louse (*Bovicola bovis* [Nitz.])	5-7	15-18	
	Cattle Tick (*Boophilus annulatus* [*Say*])			
	Psoroptic or Common Scab Mite (*Psoroptes equi bovis*)	3-4	10-12	15-24
	Sarcoptic Scab (*Sarcoptes scabei caprae*)			
	Chorioptic Scab (*Chorioptes bovis*)			
	Demodectic Mange (*Demodex bovis*)			
GOATS	Common goat louse (*Linognathus stenopsis* Burm.)			
	Biting lice (*Bovicola* spp.)			
	Mange mites (*Sarcoptes, Psoroptes Chorioptes, Demodex*)			
HOGS	Sarcoptic mange mite (*Sarcoptes scabei suis*)	3-10	10-12	10-25
	Demodectic mange mite (*Demodex phylloides*)			
	Hog louse (*Haematopinus suis L.*)	12-20	10	90
POULTRY	Chicken head louse (*Lipeurus heterographus* Nitz.)			
	Body louse (*Menacanthus stramineus*)	4-7	17-21	50-300
	Shaft louse (*Menopon gallinae*)			
	Chicken mite (*Dermanyssus gallinae*)	2	5	24-56
	Feather mite (*Liponyssus sylviarum*)			
	Scaly-leg mite (*Cnemidocoptes mutans*)			
	Depluming mite (*C. gallinae*)			
	Chigger (*Eutrombicula alfreddugesi* Oud.)			
	Fowl tick (*Argas mineatus* Koch)	10 days to 3 months		900
	Bedbugs (*Cimex lectularius* L.)	6-17	28-42	200
HORSES	Sucking horse louse (*Haematopinus asini* L.)	11-20	11-12	
	Biting louse (*Trichodectes equi* L.)	8-10	10-12	10-25
	Sarcoptic mange mite (*Sarcoptes scabei equi*)	3-10	10-12	15-24
	Psoroptic mange mite (*Psoroptes communis equi*)	3-4		
	Chorioptic mange mite			
	Ear tick (*Ornithodoros megnini* Duges)	21		
SHEEP	Tick or Ked (*Melophagus ovinus* L.)	12-15 pupae		
	Sucking lice (*Haematopinus ovillus, Linognathus pedalis*)	10-18	11-12	
	Biting Lice (*Trichodectes sphaerocephalus*)	10	11-12	
	Sheep scab mite (*Psoroptes ovis* Her.)	4-7	10-12	15-24
	Chorioptic or Foot scab mite (*Chorioptes bovis ovis*)			

gradually in a flock to the point where it is difficult to detect scabby animals and then, after this period of inactivity or dormancy, suddenly manifest itself again. It is believed that these alternate periods of activity and inactivity of the mites may be due to a relationship between moisture and egg production.

Common symptoms of infestation are retarded growth and lowered condition, making for greater susceptibility to disease, lack of energy and a general unkempt or ragged appearance of the coat. In severe cases sterility and even death of the animal may result. The skin abrasions caused by rubbing afford opportunities for the invasion of germs and absorption of poisonous materials. Blowflies are attracted to such areas and to the blood smears around the skin punctures of ticks. Several livestock diseases are transmitted by certain insects. Of note is cattle fever by the cattle fever tick.

One of the important, all too often unsuspected, reasons for decreases in poultry egg production is infestation by crawling insects.

Many farmers believe that animals get so accustomed to insect infestations as not to be annoyed by their presence. This, of course, is untrue, since animals freed from crawling insects at once "do better," enough better to justify the cost of treatment.

Role as Disease Carriers

ONLY a few of the many species of external animal parasites are known to transmit livestock diseases. The most noteworthy of these is the Cattle Tick (*Boophilus annulatus*) which infects cattle with a highly infectious blood disease. Death results in 10 per cent of the chronic cases and up to 90 per cent of the acute cases according to U.S.D.A. authorities. They state: "The fight to eliminate the cattle fever tick from the United States is probably the most extensive and sustained attack ever made on any of man's parasitic enemies. It has resulted in freeing approximately 99 per cent of the area formerly infested and has almost entirely eliminated the appalling losses once caused by the tick

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in the beef and dairy industries of the south. Death losses from tick fever have been practically eliminated."

Ticks are believed by some to be associated with anaplasmosis, the dread blood disease of cattle and possibly equine encephalomyelitis.

A form of common fowl paralysis is associated with the fowl tick or blue bug which is an exceedingly common parasite of poultry in the south. As far as is known, the sheep tick is not a carrier of any sheep disease. Mites have been claimed to play a role in the dissemination of fowl cholera and these along with ticks, as carriers of a parasitic worm that causes Spirochatosis.

Habits and Method of Spread

THE chief method of spreading of crawling insects is by direct transfer from an infested to an uninfested animal. When animals are held together in close quarters this is readily accomplished, hence the reason, as already indicated, why infestations (particularly lice) become most severe during the winter and fall months. Parasites on horses are carried on curry combs, brushes, blankets, harness and saddles. Insects commonly drop from their hosts and are picked up in sundry ways by stock. In this connection there is wide variance in the ability of different crawling insects to live in an unfed state apart from the host, to wit:

Mange mites	up to 4 weeks
Bedbugs	about 2 months
Sheep tick	about 2 months
Chicken mites	about 4-5 months
Fowl tick	up to 3 years

This explains the origin of infestations on stock which were placed on premises or in buildings which were vacated for extended periods of time. In the case of lice which spend their entire life cycle on their host, the newly-hatched young must obtain food within three or four days or perish, hence the chances of stock becoming infested from young lice picked up on the premises, while possible, is not so likely. According to Walts the popular notion that lice crawl off hogs and hide in bedding and cracks, thus spreading from pen to pen, is erroneous. When they do crawl off it is "accidental and not the rule." Lice quickly transfer from one animal to another when they are kept in close quarters. In handling infested hogs, lice can be directly transferred to clean animals. The same is true for lice on other animals. With reference to goat lice Babcock comments: "The mature female lice naturally migrate outward toward the surface of the fleece, especially when the infested animals are very lousy. When an infested animal comes in contact with or rubs another animal, these sexually developed female lice become very active and readily migrate to the new animal. This transfer of lice occurs not only among the goats in a flock but also between animals of different flocks meeting along the fence line. This is especially true during the breeding season. Clean goats exhibited at fairs also have an excellent opportunity of becoming infested if there are any lousy goats there." The young of true ticks which hatch from eggs deposited by engorged females that drop to the ground to oviposit can subsist 200-300 days without food. Crawling on vegetation, the young ticks quickly transfer to any animal that happens by.

Young fleas are tiny, hairy worms that hatch from eggs falling off infested animals. They feed on the droppings of adult fleas and various other refuse and mature in about two weeks into the active jumping adults that attack stock. Barns and yards may be completely overrun with them.

A more complicated life cycle is that of the chigger or harvest mite. The large, harmless, brilliant red young are notorious parasites of snakes and other wild animals. Unfortunately they are also serious pests of poultry.

Poultry bedbugs and mites secrete themselves in cracks and crevices during the day, coming out at night to seek their hosts for food.

Control of animal parasites involves ridding animals of their infestations and, for those species that spend only part of their life cycle on the body, treatment of infested premises also.

Treatment of Infestations

Dipping.—When large numbers of animals are to be treated and in areas where regular control operations are necessary, submerging of infested stock in insecticidal solutions is the only practical method of control. Special dipping vats are required. Various types are described in U.S.D.A. bulletins dealing with insect control on stock. The dips listed in the table on the following page are widely used and can be depended upon to give control.

Direct Hand Applications.—When only a few animals are to be treated, the hand method of application is useful and effective in proportion to the thoroughness in applying the insecticide. With cattle, horses and mules, where there is the difficulty in covering the entire body surface, hand treatments give only temporary relief. The advantage of hand treatments over dipping is that applications can be made regardless of weather conditions.

Cattle, Horses, Mules, Sheep.—The powders are applied either by a shaker can or by a dust gun. In either case the powder must be worked in to the skin with the fingers. From 1 to 4 ounces per animal is required, depending on size. Spraying is commonly used and, except on sheep whose coats cannot be sufficiently wetted to insure control, good results are obtained. When any of the standard water-base dips are used, there is a tendency for much of the liquid to run off the animal. Petroleum oil livestock sprays used as fly killers or repellents are effective but must be used with caution to avoid injury to the hide. They are applied by atomizing from a hand sprayer or on a cloth rubbed over the body.

Various proprietary dry insecticides termed "Dry Dips" by farmers are on the market, but their toxic value to lice, mites and ticks is questionable.

Swine.—When crude petroleum or kerosene emulsion or the dipping solutions are applied by hand with a brush, mop, cloth, or hand atomizer, the entire body must be treated, especially between the thighs and inner surfaces of the ears.

Poultry.—Four methods are in common use—dusting, dipping, greasing and fumigating.

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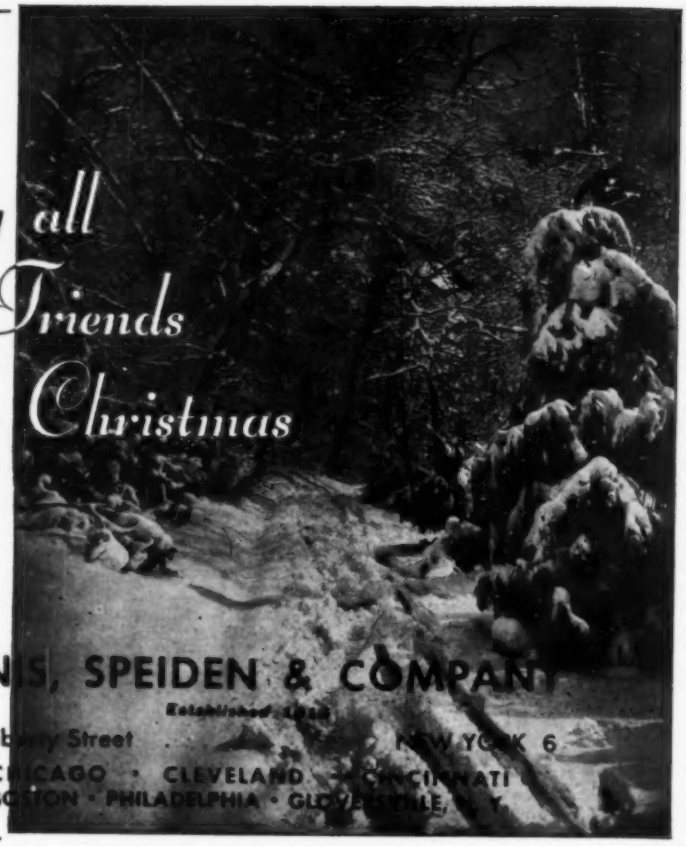
For *dusting*, any of the proprietary powders containing sodium fluoride, sodium fluosilicate, pyrethrum, derris powder, rotenone, phenothiazine, orthophenylphenol, tobacco dust, sulfur or combinations thereof are satisfactory when used at the rate of about 1 pound per 100 hens. Powders containing naphthalene, tobacco dust and other ingredients comprise many proprietary "louse killers" for poultry. At 10 to 25 per cent, naphthalene kills lice but is apt to cause injury if rubbed into the skin. Most of these materials do not kill the eggs or nits, hence a second application is required. The once common notion that any finely-divided powder is effective was discredited by Abbott ('20). Dust baths for chickens would seem an easy way of delousing them, but only partial

DIPS FOR CONTROL OF INSECTS ON LIVESTOCK

	Formula		*Effective for*	*No. Dippings*	*Recommended By*
1.	Lime sulfur water	1 part 25 gals.	Psoroptic, Chorioptic Mange (horses, cattle, sheep) Sarcoptic Mange (ibid)	Two, 12-15 days apart	
			Lice, on horses, mules	Four to seven, 6-10 days apart	
2.	Nicotine sulfate (.05% nicotine in dip solution)		Mange, as above Sheep Tick	Ibid Two, 24-28 days apart	U.S.D.A. (Official for dipping)
3.	Caustic Soda (85% pure) White arsenic (99% pure) Sal Soda Crystals Pine tar Water	4# 8# 8# 1 gal. 500 gals.	Lice, Ticks on horses, mules, cattle, sheep, goats	Two, 14-16 days apart	
4.	Cube or derris powder 5% Rotenone) Wettable sulfur Water	10# 100# 1000 gal.	Lice on Livestock	14-16 days apart	U.S.D.A.
5.	Coal-tar creosote		Lice Sheep Tick	Two, 24-28 days apart	
6.	Crude Petroleum		Hog lice, Mange	One	
7.	Liquor Cresolis Waste Oil	1 pint 10 gals.	Hog lice, Mange		Iowa
8.	Sodium fluosilicate Phenothiazine White flour	2 parts 1 part 1 part	Chewing cattle louse, Short and long-nosed cattle louse		Telford et al
9.	Nicotine (96%) Acetic Acid (8-12%) Water	2.5 gm. 100.0 gm. 1 liter	Horse lice	One application destroys nits and lice	
10.	Sulfur Sabadilla seed (ground) Pyrethrum powder Naphthalene (resublimed)	3 parts 1 part 1 part 1 part	Lice on calves		Wis.
11.	Fuel Oil Kerosene	5 gals. 1 qt.	Hog lice, Mange		Illinois
12.	Kerosene Castile Soap Warm water	2 gal. ½ lb. 1 gal.	Hog lice, Mange		Illinois
13.	Fused-Bentonite-Sulfur-Cube		Sheep Tick	One	
14.	Derris or Cube (5% R.) Water	1 lb. 100 gals.	Sheep Tick	One	
15.	Wettable Sulfur Water	100 gals. 1000 gals.	Sheep Tick		Schwardt & Matthysse
16.	Fixed Nicotine (Black Leaf 155) Wettable Sulfur Water	10 lbs. 100 lbs. 1000 gals.	Sheep Tick		Schwardt & Matthysse
17.	Sodium Fluosilicate Water	1 oz. 1 gal.			Parish, 1943
18.	Sodium fluoride Water	1 oz. 1 gal.	Poultry Lice		Parish, 1940
19.	Phenothiazine				
20.	Sulfur Soap Water	2 oz. 1 oz. 1 gal.	Poultry lice, Depluming mite		
21.	Sheep Dip Water	1 part 4 parts	Poultry Ticks		

Wishing all Our Friends A Merry Christmas



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control can be expected. More effective for this purpose than the fine road dust-coal ashes mixture often used is the Marcovitch formula of three parts of finely-ground phosphate rock and one part of sodium fluosilicate.

A convenient method of applying powders to chickens is to hold the fowl by the legs and shake the powder among the feathers on the breast, back, fluff, thighs, head, neck and wings. A pinch of the powder applied on the above named parts is also effective.

Many poultrymen prefer to *dip* fowls, which method gives excellent results, is easier to use and more economical. Dips containing sulfur, sodium fluoride, sodium fluosilicate (1 oz. per gal.) are excellent. One pound of either treats about 200 birds.

Greasing the heads of young chicks and poults with lard or petrolatum is a recommended control for head lice. On mature fowls a mercurial ointment - vaseline mixture (about equal parts) is preferable. A pea-size lump is rubbed into the skin below the vent and under each wing. It is claimed that only two applications a year are required to keep a flock free from lice.

Fumigating.—The most satisfactory fumigant is nicotine, applied as a 40 per cent solution of nicotine sulfate or in the form of nicotine alkaloid in a petroleum oil vehicle on the roosts just before the birds go to roost. The warmth from the fowl's body releases the fumes which arise and pass through the feathers. Eight ounces of nicotine sulfate treats 100 running feet of roosts. The poultry house must be fairly tight yet with enough ventilation to prevent suffocation of the birds. Some poultrymen believe that fumes are given off 10 or 12 days after application, but most authorities agree that not much control can be expected after the second night.

Treatment of Infested Premises

WITH the possible exception of lice which remain on their hosts constantly, many species (mites, ticks, bedbugs, fleas) live apart from their hosts during a period in their life cycle, and effective control measures must be exerted on these free-living forms. Thorough cleaning and disinfection of livestock pens and yards as a regular procedure not only prevents disease, but renders conditions unfavorable for insects. When actual infestations are involved, special treatments become necessary, involving the application of special insecticides which must be effective in destroying all stages of insect life.

Poultry mites attack their hosts only at night for feeding, and then seek cracks and crevices in the poultry house for seculsion during the day. The control recommendations of the U.S.D.A. are implicit: "The first step is to remove unnecessary boards, boxes and trash from the poultry house and yard. Next, remove and burn litter and nest material. Then apply one of the carbolineums (high grade anthracene oil), crude petroleum, or creosote oil. If the house is very heavily infested, the entire interior, including the roof, should be sprayed. If the infestation is light, applying the material to the roost supports, nests, and adjacent areas on the walls usually suffices."

The action of these materials persists for several months. One application a year is usually sufficient. These same methods also control the fowl tick, bedbugs and fleas. Other materials commonly used but less effective are coal tar dip solutions (10 per cent), nicotine sulfate (4 per cent), kerosene emulsions, arsenical dips, lime-sulfur solutions and whitewash containing 5 per cent of crude carbolic acid. Fly sprays are commonly used but do not give as long lasting protection as some of the materials mentioned above.

Hogs and sheep that have been treated for mange should not be permitted to use infested pens or bedding. The latter should be removed, the pens cleaned thoroughly and then sprayed with a coal-tar-creosote dip.

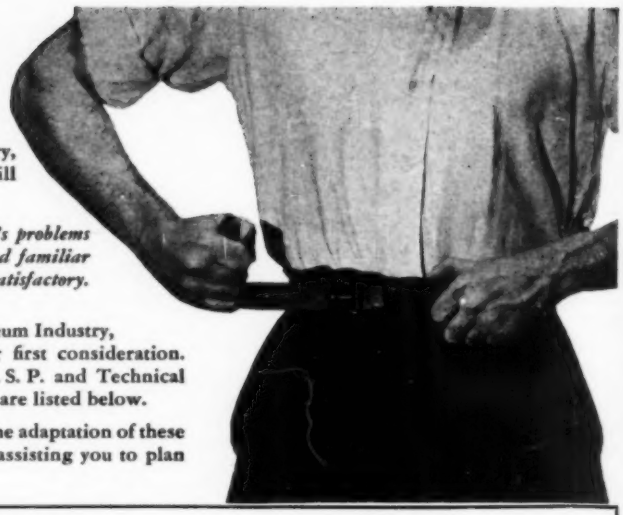
Veterinarians recommend a 5 per cent solution of cresol for treating harnesses, blankets, grooming kits, feedbags, manger and feed box, soap and water for treating leather and a 1 per cent lye solution on stable fixtures in combatting mange mites which are spread by these articles.

New and Old Angles on Control

IT is a common belief that undernourished stock are more susceptible to attack by lice and mange mites than healthy, well-fed animals. Thus comment U.S.D.A. entomologists: "In the case of such pests as lice and mange mites, it seems apparent that poor condition, for which the owner is partly responsible, predisposes the animal to attack. . . ." "The transmissibility of the disease (mange) is not limited to any one season of the year, although cattle on green, succulent feed and in a thriving condition seldom contact scab" and with reference to hogs, "Exposure to inclement weather, insufficient feed or feed of poor quality, or any other circumstance tending to lessen the vitality or functional activities of the hogs hastens the spread and development of mange." Essentially the same has been declared with reference to lice and mites on poultry. The very few experiments that have been conducted on the relation of nutrition to parasite infestations are concerned with laboratory rats. Searles and Snyder conducted experiments to ascertain why well-nournished laboratory rats were less heavily infested than undernourished individuals and observed that animals fed a ration of ground wheat had the lowest louse population. Continued experiments with Vitamin A seemed to substantiate previous claims, but, as pointed out by Kartman, this resistance to lice brought about by Vitamin A applies only to "certain very limited and controlled experimental conditions" yet does offer a "promising and interesting field of investigation and perhaps not without some important economic prospects."

The fact that in man at least ingested sulfur is excreted on the skin as hydrogen sulfide early led investigators to consider the possible effect of feeding sulfur to remove external parasites. Mate, at the Ohio Station, gave 32 tick-infested ewes free access to 6 lbs. of a mixture of 1 lb. of sulfur and 2 lbs. of salt but in two weeks' time, after the mixture had been entirely consumed, an examination re-

as we tighten our belts . . .



Cheerfully—eagerly, because it's our contribution to Victory, all of us have accepted the fact that for the duration, we will have to tighten our belts and "do without."

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etc.

vealed "more ticks than before the test began." Tests on poultry conducted by the Florida Station indicated positive results but continued study by Creighton et al at the same station proved that decreases in louse populations on fowls, thought due to sulfur, were simply *normal* fluctuations. It is interesting to note that many preparations containing sulfur to add to the drinking water or to the feed for louse control are on the market. The public should be warned against their use.

Conclusion

The development of new and better insecticides for the destruction of external parasites of livestock and poultry offers an enticing field of exploration. The newer synthetics are replacing the older methods of control. In many cases better results are thus obtained more economically. At this time when food is so essential, and the farmer is paying more attention to his farm animals than in normal times, the market for insecticides for the control of livestock pests is very receptive. While it is true that insecticide manufacturers in general have overlooked this important field of research, progress is being made and noteworthy advances are being made.

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INSECT FOOD DAMAGE

(*From Page 115*)

old grain thoroughly, to use recommended insecticides for the purpose, and to construct their granaries and bins in such a way as to discourage conditions favorable to the development of insects. Owners of grain elevators can be persuaded to cease their practice of fumigation and cleaning bins only at set times of the year and to practice control methods as often as necessary. Owners of food factories should be told that the war on insects must be *constant*.

From time to time releases on various insects are issued by the U. S. Department of Agriculture when indications are that they will be present in greater numbers than usual, and unless controlled effectively will cause serious damage to crops. Such a release is issued, for example, in the spring on the cotton boll weevil. Insecticide manufacturers can give valuable aid to saving crops if they will follow these simple rules: Keep abreast of releases on insects. See to it that dealers in the particular area affected have a good stock of the right insecticide on hand for control. At the same time help the dealers to call the matter to the attention of the people who need it through the rural press and by radio.

Cleanliness is something else that cannot be stressed too much. It cannot be over-emphasized in either publicity or advertising material, for many insects are extremely tiny and can live in cracks and crevices and breed if suitable food is present. Food processors should be persuaded to eliminate refuse piles outside their buildings, to fumigate and use insecticides frequently. A processor's business is bound to drop in proportion to the number of customers who find insects in his packaged products. Nothing could be more damaging to his reputation.

The housewife too, can be instructed through good insecticide advertising as to what insecticides to use for what pests, and the value of effective use of liquid insecticides. The type of sprayer to use for greatest effectiveness and that can be operated with a minimum of effort is also an important consideration, for if the sprayer selected is unsatisfactory in performance it can readily contribute to dissatisfaction with the insecticide itself on the part of the user.

Lastly, the insecticide manufacturer should emphasize the dependability of his product, its quality and reliability. In wartime with shortages affecting the insecticide industry as well as many another, one of the chief causes of worry for the consumer is the quality of the product. The insecticide manufacturer must resist the temptation to compete with inferior goods, for the net result would be a reflection on his brand. Moreover, if standards are kept up, effectiveness in use will follow. A manufacturer owes it to himself and his country today to keep on making the best product he can.

GESAROL IN STABLE FLY CONTROL

(*From Page 119*)

had to deal with a considerable daily influx of flies to the stable.

At the beginning of the test we counted flies of the two above-mentioned species by the thousands. These literally covered the walls and the ceiling. The cows were very nervous, kept their tails in constant motion, and shook frequently in order to rid themselves of the flies. While the spraying was going on, the flies dropped at once from the ceiling and landed in a paralyzed state on the floor where they soon succumbed from the contact with the spray. The stable soon became free from flies and as a result the cows became more quiet and settled.

The checks which we made daily presented the following picture: Up to July 10 (20 days) the stable was free of flies every morning. By evening there was an influx amounting to from 100 to 200 flies, but these had been destroyed by the following morning owing to the toxic effect of "Gesarol." The hot weather favored the development of a great many flies,

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which flew in large numbers into the stable. In the non-treated stables the infestation amounted to the usual fly plagues comomnly expected during the hot summer, whereas the application of the spray automatically rid the stable of all incoming flies during the following days. In this connection we observed clearly the extremely potent and lasting effect of the material, which represents something entirely new and offers many other possibilities.

From July 18 (28 days later) there were found on the ceiling up to 20 live flies, and a very slow decreasing effect of the spray deposit was taking place. The stable remained practically free from flies up to July 25 (36 days), in other words, about five weeks, in spite of the decreasing effect of the spray deposit. There was never the troublesome infestation of flies in this stable as was the case in the other stables which had not been treated. The spray deposit still took care of the daily entrance of flies in a very discernible way. The ten cows were quiet during the entire time in contrast to those which were housed in non-treated stables, which I frequently visited as a matter of checking up. Even on August 1 (43 days later) there was no indication of a true fly plague in the stable, although during the day somewhere up to 1,000 flies were found resting on the walls and on the ceiling. The cows of course were no longer as quiet as they had been up to July 23.

We made a second application on August 1, which will have its good effect until late in the fall when the flies naturally disappear.

By spraying the walls and the ceiling with a 1 per cent solution of "Gesarol" a protection against flies is obtained in a very simple way. This method is efficacious for five to six weeks and eliminates all the irritation and difficulties caused by these pests. The flies entering the stable are paralyzed within a short time by coming into contact with the spray deposits on the walls and on the ceiling. Because the "Gesarol" has a lasting effect as a contact poison, a continuous destruction of flies is obtained for a long period of time.

The residual effect lasting for some time is of particular value and of much importance, since it is considerably superior to all insecticides in the control of flies, where their entrance cannot be prevented or where other insecticides have no lasting effect. Owing to the satisfactory prolonged potency of "Gesarol," the livestock became remarkably quiet and milk production increased in the stables treated with this insecticide.

In addition, the effectiveness of this spray is not lessened when the walls are whitewashed.

Conclusion

IN "Gesarol" we have a remedy, which is destined to effect a satisfactory control of flies in stables and is bound to become quite popular. Spraying the stables twice in the summer, the first time in the early half of June and the second time at the beginning of August, will eliminate the fly plague in the stables for the whole summer. It is also probable that the spraying of "Gesarol" in comfort stations, water closets, latrines, etc., will materially improve the hygienic conditions in these places with regard to the control of flies present.

AGRICULTURAL INSECTICIDES

(*From Page* 125)

if there is a shortage of copper sulphate we can get by with approximately half as much copper in our dusts, if we use it efficiently."

Search for substitutes for the metallic salts used in seed treatment brought indications that "both thiosan and fermate are most promising. . . . The work done shows that they are more effective than previously used copper and mercury compounds in preventing both pre- and post-emergence damping off. They are non-injurious on all vegetable seeds tested except lettuce. Present indications are that these materials will be new and better means of protecting seed beds, not temporary substitutes."

Similar enthusiasm is expressed for phenothiazine, tried as a substitute for standard codling moth sprays and found to "apparently equal or exceed lead arsenate in effectiveness." And the report adds: "If the price of this chemical is ever brought in line with prices on standard insecticides then we may have a welcome substitute for the codling moth spray materials now in use."

To further conserve copper some fundamental studies were made at West Virginia's station on factors influencing the toxicity of copper compounds. Certain amino acids were found to greatly increase the solubility of copper oxide but reduce the degree of toxicity of the copper in solution. Further tests were projected of the possibility of increasing the fungicidal value of the copper oxide and reducing plant injury by adding some of the amino acids to copper disinfectants.

Pennsylvania State College investigators found that coal tar fractions possess "considerable value as insecticides." Certain of the fractions, their report asserts, "were superior to tar preparations now in use . . . but the work is far from complete."

In trials of sprays for plum curculio, the Pennsylvanians found that "four pounds of basic lead arsenate per 100 gallons of spray were as effective as two pounds of acid lead arsenate." The fluorine compounds, "Kryocide," "Alorco," cryolite and "Dutox," "were somewhat more effective at 3 lbs. per 100 gals. than arsenical sprays," although there was a possibility that the fluorine "may produce much injury to fruit and foliage, if followed by prolonged cloudy weather." Another conclusion was that "the mixing of thiocyanate dusts with standard pyrethrum extract dusts allows some cheapening of the powder commonly used in dusting mushroom houses, without sacrifice of toxicity to the flies."

(*To Be Concluded*)

Penicillin B

Green cheese mold yields *penicillin notatum*, from which penicillin has been extracted and from which a second substance, penicillin B, is now obtained. Penicillin B, isolated by a group of research workers at St. Louis University, is nearly 10 times as potent a germ killer as penicillin and

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kills bacteria in dilutions as high as 1 billion to 1. Unfortunately, it is even more rare than the original penicillin.

The new germicides belong to the chemical group known as acridines, composed of 3 benzene rings joined together, with 1 atom of nitrogen in each ring. The nitrogen atom at the lower end of the center ring gives this group a characteristic color. Penicillin B has been found to contain an important oxygen-carrying group. It acts in exactly the opposite manner from that of the acridines. Instead of depriving bacteria of oxygen it surrounds them with active oxygen in the form of hydrogen peroxide which results literally in burning the bacteria up. *Chem. Met. Engineering 50*, No. 10, 158 (1943).

RAT BAIT FORMULATION

(*From Page* 129)

Since shipping shortages have forced the attention of food processors to dehydration and other forms of food condensing, a variety of new concentrates are appearing on the market. Such substances as raisins, dried apples and certain jellies have been known and used for some years in rat and mouse baits, but the possibilities which may be present in the newer apple concentrates, the desiccated sweet potatoes and other vegetable products are just being studied.

During wartime it will be impossible to obtain any large quantities of rationed canned goods, but there are two or three possible bait ingredients which should be mentioned because of a unique source of supply which will be available to many of the firms in the industry. Tomato puree and tomato catsup have been shown to be particularly useful rat baits, either used alone or mixed with bread crumbs, and blended with thallium, arsenic or red squill. As these products are made from field grown crops which are particularly susceptible to insect contamination, the U. S. Food, Drug and Insecticide Administration maintains careful control on the commercial "Packs." Often extensive seizures of these tomato-bearing materials are made when they have been proved to be unfit for human consumption. The Government would probably permit the sale of such condemned goods for use in rat control. The same procedure would be true of other condemned products, and since there are 16 laboratories of the Food and Drug Administration strategically located throughout the country, it would be well for the pest control industry to investigate the possibilities through the closest laboratory of that agency. Another source of rat bait is one which many of your operators are using already, and that is through the larger groceries where slightly swelled cans of various foods unsuited for human consumption will be set aside for use in rat control. One important point bearing on this practice must be kept in mind, however. Rats do not like badly tainted food and its use is merely a waste of poison and manpower and serves to educate the animals.

One suggestion must be emphasized in any discussion of rat control methods during wartime, and that is that the practice of prebaiting will pay dividends. That is particuarly true where the less attractive and effective foods are used, and where some of the newer and expensive poisons are employed. In every instance where difficulty has been experienced in previous poisoning trials, prebaiting should be employed as a routine procedure before another poison treatment. If the less well-taken rat foods are the only ones available for use, prebait should be used before the first poison exposure. England has adopted a policy of prebaiting ahead of rat poison formulas which would certainly not be effective if used alone. The same thing is true in the sugar cane fields of the Hawaiian Islands. Prebaiting has proved to be essential under certain conditions, and valuable under a wide variety of circumstances. If you have a particularly difficult situation, try prebaiting.

In conclusion, it may be stated that research to find new rodenticides is being emphasized during wartime, with a great deal of attention being given to the field of synthetic organic chemicals. If the accomplishments in new insecticides can be used as an indication, this line of research should be most fruitful. Experiments to learn how to employ poisons that are still available are also being stressed, since the most rapid benefits will come from the results from these studies.

—— • ——

Dry Cleaning to Kill Lice

It has been believed that some petroleum fractions used as solvents kill lice, while others do not. Tests were therefore made to determine the effect of normal dry cleaning. It was found that Stoddard solvent is effective in killing adult lice, but not the eggs. However, eggs were killed by dry heat during the tumbling operation, in which the temperature of the exhaust air did not exceed 160°F. Previous work showed that exposure to dry air at 140° F. for 20 minutes killed lice and eggs completely. *Textile Colorist* 65, 358 (1943).

PRESIDENT'S REPORT

(*From Page* 110)

well, and this is my parting wish for the group:

"I do the very best I know how—the very best I can
And I mean to keep doing so until the end.
If the end brings me out all right,
What is said against me won't amount to anything.
If the end brings me out wrong,
Ten angels swearing I was right would make no difference."

SECRETARY'S REPORT

(*From Page* 111)

of tempo of airplanes, rockets, tanks, barges, "radar," "bazookas," and the other trappings, so will the post-war period of World War II have a tempo far different from World War I post war days. The same rules will probably not apply. Business must watch the signposts carefully, read them in the light of the day, and take the fork in the road that the new sign post erected on the new day indicates. The old adage of the early automobile days still holds, "Don't drive in ruts."

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Stauffer's "Magnetic" is a natural Cryolite with a sodium fluoaluminate content of not less than 90% and is an effective insecticide for many chewing insects.

SULPHUR

Stauffer carries a full line of dusting and wettable sulphurs in various finenesses and purities that may be packaged alone or in combination with other insecticides.

Write for complete information to

STAUFFER CHEMICAL COMPANY

420 Lexington Avenue, New York 17, New York

Jobbers!

SELF POLISHING

FLOOR WAX

- *Lowest Prices*
- *Highest Quality*
- *Rich Carnauba Base*

Write for Samples, Prices and Further Information

M & H LABORATORIES

2705 ARCHER AVE. CHICAGO, ILL.

AMENDED TEXT OF CPR No. 1

(*From Page 74*)

(b) Petitions for exception shall be filed in accordance with the provisions of Procedural Regulation No. 1, issued by the Office of Price Administration.

1386.6 *Petitions for Amendment.* Persons seeking any modification of this Commodity Practices Regulation No. 1 or an adjustment or exception not provided for herein may file petitions for amendment in accordance with the provisions of Procedural Regulation No. 1 issued by the Office of Price Administration.

1386.7 *Applicability.* (a) The provisions of this Commodity Practices Regulation No. 1 shall be applicable only to sales or deliveries of bar or package soaps or cleansers to persons in the United States, its territories and possessions, and the District of Columbia.

(b) The provisions of this Commodity Regulation No. 1 shall not be applicable to sales or deliveries of bar or package soaps or cleansers to the United States or any agency thereof.

1386.8 *Effective Date.* This Commodity Practices Regulation No. 1 (1386.1 to 1386.8, inclusive) shall become effective July 21, 1942. Issued this 17th day of July 1942.

This amendment (No. 1) shall become effective on April 21, 1943 Issued this 15th day of April 1943.

This amendment (No. 2) shall become effective on October 20, 1943. Issued this 20th day of October 1943.

1386.9 *Report form.* OPA Form No. 692,541 (not shown here—ED. NOTE), copies of which may be obtained on application to the national, regional, or district offices of the Office of Price Administration, or a copy thereof, is to be used in making the report required by 1386.1.

Instructions to Form

Column (1). If you have reduced your price for the changed bar or package, state your suggested percentage price reduction to your resellers in this column.

Column (2). If you have changed the price of the bar or package to conform with the change in composition, enter in "before" sub-column your maximum price which was in effect immediately prior to the change in composition. Enter in "after" sub-column the price you propose to charge for the changed bar or package.

Columns (3) to (7) inclusive. In "before" sub-column of each column state the composition of the bar or package produced during the 30-day period ending July 17, 1942. If you sold, but did not produce, the bar or package in that period, then state the composition as produced by you in the most recent period prior to the 30 days ending July 17, 1942. In "after" sub-column show the composition of the bar or package as changed by you under the provisions of 1386.1 (d) or (e) of Commodity Practices Regulation No. 1.

Note: All weights are to be expressed as ounces per consumer unit, to three decimal places.

Note: The reporting requirements of this amendment (No. 2) have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Prentiss M. Brown
Administrator

—— • ——

Bactericidal Power

The disadvantages of the end-point methods for determination of bactericidal power are discussed; it is suggested that they should be replaced by counting methods. From the counts which show the rate of death of organisms in two lethal solutions, the times required for 50 per cent of deaths, called LT 50, are determined. The ratio of LT 50 for two substances is a measure of their relative bactericidal efficiencies. The concentration exponent of phenol determined by counts and calculated from the LT 50 value for *B. coli* (type I) is approximately 4.4, and for *para*-chloro-*meta*-cresol 8.0. The activity of the latter increases much more rapidly than that of phenol when the concentration is increased by the same amount, and the reverse is true on decrease of concentration. E. R. Withell. *Quart. J. Pharm. Pharmacol.* 15, 301.13.

—— • ——

Mosquito Control

Control of mosquitoes breeding in water containers reserved for fire-prevention purposes was effected for at least 2.5 months by an addition of 1.5 ounces of copper sulfate per 50 cubic feet of water. Water treated with Vatsol, a sulfonated ester of dicarboxylic acid, at the rate of 2cc. of a 5 per cent solution per 1000 cubic feet was mosquito-free for about 6 weeks. Similar treatment with a 5 per cent solution of 2-7-R, a sulfonated naphthalene, remained effective for at least several months. C. E. Pemberton. *Hawaiian Sugar Planters Assoc.*, Printed Repts. Ann. Meeting, Rept. Comm. in Charge Expt. Sta. 62, 18-22; through Chem. Abs.

NaF for Roach Control

The efficacy of sodium fluoride as a stomach poison and as a contact insecticide against the roach is discussed by James T. Griffiths, Jr., and Oscar E. Tauber, Iowa State College, in an article in the August, 1943, issue of the *Journal of Economic Entomology*, p. 536-540. The results of the studies on which the article is based are summarized as follows: 1. By feeding starch paste which contained NaF it was determined that NaF could act as a stomach poison for adults of the American roach, *Periplaneta americana* L. In this experiment, females lived longer than males. The average survival time after ingestion of a lethal dose is about 3.5 days.

2. Roaches were allowed to walk through NaF. There was a correlation between the amount of NaF collected on the body surface and the rapidity with which death occurred. Adult roaches with unsealed mouth parts did not die sooner than those with sealed mouth parts. Females lived longer than males. After contact with NaF, average survival of males was about 33 hours; average survival of females was about 52 hours.

3. As a result of this controlled laboratory investigation, it appears that when a roach walks through NaF, death occurs because of contact rather than from effects of stomach poison. The cleaning of appendages is of negligible importance as a contributing factor in the mortality, since death occurs from contact effects before the ingested NaF has a chance to manifest its potential lethal property. Under actual conditions of attempted control of roaches it is, of course, difficult to isolate the causative mechanism of death. However, on the basis of the reported analysis, it seems likely that the first roaches to die are those killed from effect of contact with the NaF.

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Deodorant Mixture

Natural marl and lime are used together as a deodorant, germicide or fungicide for various purposes. R. I. Grady. U. S. Patent No. 2,317,908.

KRANICH

WAR shortages are bringing about many changes in our line of soaps for jobbers and converters. Fortunately, our many years of experience in the manufacture of quality soaps enable us to make these changes with the minimum inconvenience to our customers. Every possible effort is being made to maintain the quality of KRANICH soaps.

To protect our regular customers we are filling orders on many hard-to-get products on the basis of former purchases. We know you will appreciate the fairness of such a policy.

Plan to consult KRANICH regarding your supply problems. — We may be able to help.

Shampoo

Liquid Castile Soap

•

Powdered Soap

U. S. P. Castile (Only)

•

Potash Soaps

Soft Potash 40%
U. S. P. XII Green

•

KRANICH SOAP COMPANY

55 Richards St. Brooklyn, N. Y.

SOAPS

BARRETT CHEMICALS

FOR THE SOAP AND DISINFECTANT INDUSTRIES

America's all-out Victory Program requires ever increasing quantities of coal-tar chemicals for which Barrett is a key source of supply. All Barrett's facilities and 88 years of manufacturing experience are being utilized to keep production at top limits. But because so many Barrett Chemicals are vital to winning the war, we ask the indulgence of our customers in civilian industries if deliveries are delayed.

U. S. P. CRESOL
CRESYLIC ACID
U. S. P. PHENOL
TAR ACID OIL
NAPHTHALENE
PARA CHLOR META CRESOL
CHLOR XYLENOL
PYRIDINE
XYLOL
CYCLOHEXANOL
METHYLCYCLOHEXANOL
ANHYDROUS AMMONIA

Barrett CHEMICALS

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK

. . . ONE OF AMERICA'S GREAT BASIC BUSINESSES

NEWS

Rescind Pine Oil Freeze

Producers of pine oil, who were instructed on November 8 that no further deliveries could be made without the specific authorization of the War Production Board, were subsequently advised that the freeze order had been rescinded. The original freeze order originated in the office of Dexter L. Lewis, chief of the Naval Stores Unit, Protective Coatings and Materials Section of WPB.

Ask More Insecticides

A recommendation that the government increase by a third its allotment of civilian supplies of nonpoisonous insecticides and other equipment for 1944 Victory gardens was urged recently by the National Victory Garden two-day conference in New York. The two-day planning session was held in preparation for the annual meeting in New York in January.

W. R. Sweeney Joins N.A.I.D.M.

W. R. Sweeney, Salisbury, Mo., Dr. Robert C. Sweeney, general manager, has just joined the National Association of Insecticide and Disinfectant Manufacturers, Inc., New York, as an active member.

McCormick Salary Board Head

Charles P. McCormick, president of McCormick & Co., Baltimore, was recently elected president of the Standard Salary Board of Maryland. He has been a member of the board since its founding and succeeds Walter D. Owens, who has been named State Employment Commissioner.

Hochstadter Joins Gallowhur

Dr. Irving Hochstadter, formerly head of Hochstadter Laboratories, Inc., New York, and of Still & Van Siclen, Inc., was recently appointed as research administrator to Gallowhur & Co., producers of the insect repellent "Skat," the skin lotion "Skol" and other chemicals, New York.

DR. IRVING HOCHSTADTER

Dr. Hochstadter has done consultant work for the soap and detergent industry and was consultant and technical advisor to the glue and gelatine industry.

S. C. Johnson Head Honored

Herbert F. Johnson, Jr., head of S. C. Johnson & Son, Inc., wax and polish manufacturers, Racine, Wis., was recently re-elected a director-at-large of the Racine Association of Commerce.

Reports on Army Insecticides

Stephen H. Dole, formerly a member of the editorial staff of *Soap & Sanitary Chemicals*, and for the past year and a half a Lieut. (j.g.) in the U. S. Navy, now stationed on an island base in the south Pacific, writes interestingly of the important part which insecticides play in the field. "Even though I haven't killed any Japs yet, I am still making the supreme sacrifice of my life's blood in this land of chiggers, mosquitoes, flies, fleas, moths, mildew, lizards, snakes, and a thousand other kinds of carnivorous insects. It's too bad I can't tell you where in the South Pacific I am because I would like to suggest it as the next meeting place for the N.A.I.D.M. The boys would really consider themselves national heroes if they could see how their products are fighting this war out here. Life would indeed be unbearable without G. I. insecticides and repellent lotions. Before I got on to the trick of applying insect lotion to the hands and legs liberally every morning and night, my ankles had all the appearance of a black market hamburger."

Cummer Prods. Expands Operations

Cummer Products Co., Bedford, O., manufacturers of cleaning fluids, shoe polish, etc., a division of Sterling Drugs, Inc., New York City, has purchased a former marble-working plant at Brattleboro, Vt., and planned to move its Bedford operations to the new location during November. The new property includes some 50,000 sq. fet., of floor space and when additional equipment is installed, will provide for increased output.

Donald Knapp Leaves WPB

Donald Knapp, chief of the packaging unit of the Chemicals Division of the War Production Board, has resigned, effective Dec. 2, to return to George Mann & Co., Providence, chemical distributors. Mr. Knapp leaves the WPB after 25 months service. Charles P. Given will act as chief of the section until later, when it is said the unit will go under the direction of the Distribution Section, headed by L. C. Leonard. Now the unit is under direct supervision of Lawrence Brown, assistant director of the Chemicals Division.

Three Missing In Warren Fire

Three women workers were missing and 15 other employees were hospitalized on Nov. 11, as the result of explosions and fire which destroyed the Warren Refining & Chemical Co., manufacturers and processors of oils, lubricants, floor waxes and polishes and varnishes, Cleveland. Damage was estimated at $200,000.

REMEMBER?

10 YEARS AGO

PETER DOUGAN WAS RE-ELECTED PRESIDENT OF NAIDM AT 20TH ANNUAL CONVENTION IN NEW YORK

HO HUM DEPARTMENT

NRA INSECTICIDE AND DISINFECTANT CODE WAS REVISED AGAIN

WIZARD, INC., CHICAGO, MAKERS OF FLY-DED, OPPOSED NRA INSECTICIDE CODE

HARRY W. COLE RETIRED AS SECRETARY OF NAIDM AFTER 20 YEARS OF ACTIVITY MOSTLY AS SECRETARY

"BANDING" OF POSTS WAS RECOMMENDED FOR KEEPING INSECTS OUT OF GUM AND CANDY VENDING MACHINES

LIGHT BULB ODORIZERS WERE MARKETED BY CANDO CORP.–HEAT OF BULB VOLATILIZING ODOR

AFTER A MONTH'S ILLNESS, HENRY NELSON V.P. OF CHEMICAL SUPPLY CO. RETURNED TO HIS DESK

MARKET REPORT

PYRETHRUM POWDER WAS 30¢ LB. AND 20-1 EXTRACT $7.00 GAL.

ATLANTA EXTERMINATING AND FUMIGATING ASSOCIATION WAS ORGANIZED

A LOUISIANA HEALTH LAW REQUIRED DISTINCTIVE COLORING OF POWDERED INSECTICIDES WHICH MIGHT BE MISTAKEN FOR EDIBLE SUBSTANCES

Agricultural Insecticide Committee

An Agricultural Insecticide and Fungicide Industry Advisory Committee, consisting of 22 manufacturing firms representing various parts of the United States was appointed Nov. 17, by the Office of Price Administration. The committee's function will be to consult with the OPA on pricing and sales matters affecting the agricultural insecticide industry as a whole. An organization meeting was held in Washington, D. C., Dec. 2, at which time the committee was to elect permanent officers. Other matters to be taken up by the committee and government agency representatives included discussions of the effectiveness and practicality of present pricing methods, including specific price regulations on arsenicals and copper sulfate.

Members of the industry advisory committee are:

W. Leonard Barlum, Florida Agricultural Supply Co., Orlando, Fla.; W. C. Bennett, Phelps-Dodge Refining Corp., New York; J. H. Boyd, Commercial Chemical Co., Memphis, Tenn.; J. B. Cary, Niagara Sprayer & Chemical Co., Middleport, N. Y.; Leon David, Brooklyn Chemical Works, Baltimore; H. C. Davies, California Spray-Chemical Corp., Richmond, Calif.; R. E. Demmon, Stauffer Chemical Co., New York; W. S. Gavan, American Cyanamid & Chemical Corp., New York; Harold R. King, R. J. Prentiss & Co., New York; G. F. Leonard, Tobacco By-Products & Chemical Corp., Louisville; T. H. McCormack, Grasselli Chemicals Division E. I. du Pont de Nemours & Co., Wilmington; Roy E. Miller, Miller Products Co., Portland, Ore.; D. F. Murphy, Rohm & Haas Co., Philadelphia; Harold Noble, S. B. Penick & Co., New York; O. M. Poole, Derris, Inc., New York; Fred S. Porter, Tennessee Corp., Atlanta; Fred C. Shaneman, Pennsylvania Salt Manufacturing Co., Tacoma, Wash.; M. L. Somerville, Sherwin-Williams Co., Bound Brook, N. J.; R. B. Stoddard, Dodge & Olcott, New York; D. I. Trainer, General Chemical Co., New York; B. P. Webster, Chipman Chemical Co., Bound Brook, N. J.; Alfred Weed, John Powell & Co., New York.

West Coast Insecticide Meeting

A joint meeting of the Agricultural Insecticide and Fungicide Association and the Pacific Insecticide Institute was held at the St. Francis Hotel, San Francisco, November 17 and 18, attendance totaling over 100. The new WPB directive on production and packaging of rotenone insecticides was explained to west coast producers and the insecticide raw material supply outlook was also outlined. Those in attendance were reported in agreement on the necessity of adopting a uniform industry policy on such national problems as coloration and Federal legislation. A policy committee representing both the west coast and national industry interests is to be appointed to encourage cooperation.

Prof. E. O. Essig, chief in entomology at University of California College of Agriculture, addressed the group on problems of insect control and food production, particularly the importance of protecting food in storage. Government representatives in attendance included Philip H. Groggins, chief of the Chemicals Division of the WFA, Warren H. Moyer, consultant to the Agricultural Chemicals Section of the WPB, and Dr. E. R. De Ong of the OPA.

A New Weed—Unnamed

On November 16 at the Flushing Hospital, Flushing, Long Island, a daughter was born to Dr. and Mrs. Alfred Weed. Latest reports from the hospital indicated that the new Weed baby was as yet unnamed. Dr. Weed, the well-known entomologist and bazoo player, stated that he and Mrs. Weed were giving some thought to a name for the new arrival which would in no way during future years identify the child with insects, insecticides or entomology. The Weeds have two other children, a boy and a girl. Dr. Weed is associated with John Powell & Co., New York.

P. C. Magnus Feted

A surprise birthday party was given to Percy C. Magnus, president of Magnus, Mabee & Reynard, Inc., essential oils, New York, on his fiftieth birthday, Oct. 21, at the Jansen suite of the Waldorf Astoria Hotel. George H. McGlynn, MM & R treasurer, presided and Bill Fischer, sales manager, on behalf of the group, presented Mr. Magnus with a set of traveling bags.

American Home Net Up

American Home Products Corp., New York, showed an increased net profit in the first nine months of 1943. After provision for all charges including income and profits taxes, net profit amounted to $3,262,111.47, equivalent to $3.56 per share on common shares outstanding. This compares with $2,848,483.31 during the same period of 1942, equivalent to $3.34 per share. In making his report, Alvin G. Brush, chairman, announced the acquisition of three more companies by American Home Products Corp. In assigning reasons for the sharp increase in profits, Mr. Brush pointed out that the company has "been heavily engaged in war work." In spite of difficulties in obtaining materials, they have been able to make substitutions sufficient to show a substantial growth in consumer sales on many items.

P.C.O. Meetings Announced

The Fourth Eastern Pest Control Operators' Conference will be held Jan. 10, 11 and 12, 1944, at Massachusetts State College, Amherst, Mass. It is sponsored by the college in cooperation with the National Pest Control Assn., Inc. The Purdue University Pest Control Operators Conference is scheduled for Jan. 17-20.

Otto Thum Dies in Calif.

Otto Thum, 78, former flypaper and insecticide manufacturer of Grand Rapids, Mich., and inventor of "Tanglefoot," died Nov. 12, in Beverly Hills, Calif.

Arrow Products Co. Move

Arrow Products Co., sanitary products, formerly of 8663 Dayton Ave., have moved to 2067—19th St., Detroit 16.

Penn-Drake INSECTI-SOL

THE PERFECT INSECTICIDE BASE

To make sure that *your* insecticide has the sales advantages listed above—you need Penn-Drake INSECTI-SOL. This modern, deodorized solvent allows your preparation to float longer, penetrate farther and evaporate completely after maximum toxic effect is reached. Refined from the finest pure Pennsylvania crude oil, INSECTI-SOL contains nothing to stain clothes, drapes or rugs. Make your insecticide most effective and appealing to your trade by specifying Penn-Drake INSECTI-SOL.

And the perfect Mothcide base is Penn-Drake Deodorized Naphtha.

For full information write Dept. 109.

penn drake petroleum products

PENNSYLVANIA REFINING CO.

GENERAL OFFICES · BUTLER, PA.

Makers White Oils (U.S.P. and Technical); Petrolatums (all grades and colors); INSECTI-SOL (deodorized insecticide base); Deodorized and other Naphthas; Petroleum Sulphonates; Waxes; Industrial and Motor Lubricants and Greases; Fuel Oils, and other petroleum products

2 Profit-makers for

Sanitary Supply Houses—

PER-MO
RAT and MICE EXTERMINATING
"LIQUID"

This tested exterminator is fatal to rodents. Can be used in liquid form or on baits. Keep it in stock and sell it to your regular customers with other sanitary supplies. "Per-Mo" is a profitable item!

PER-MO
MOTHPROOFING LIQUID

Let your customers do their own mothproofing with "Per-Mo." The Guaranteed Mothproof Liquid. It acts like a colorless dye in impregnating fabrics, has no odor and will not spot or stain. Literature and Full Particulars first letter.

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INDUSTRIAL CHEMICALS and RAW MATERIALS

COAL TAR PRODUCTS
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PYRETHRUM EXTRACT
CARNAUBA WAX
CAUSTIC POTASH CAUSTIC SODA
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PITTSBURGH 19, PENNSYLVANIA

Goodhue on Tribune Forum

Dr. Lyle D. Goodhue of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, who with Dr. W. N. Sullivan of the same bureau, perfected the aerosol method for the application of insecticides now so widely used by the armed forces for mosquito control, was a speaker before the third New York Herald Tribune Forum on Current Events at the Waldorf-Astoria Hotel, New York on November 17. His subject was "War on Mosquitoes." Outlining the history of mosquito-borne diseases such as malaria, yellow fever, sleeping sickness and others, he labeled the mosquito as the most important insect economically in all the world affecting man and animals, thriving from the Arctic to the tropics. He told of the control methods and particularly the use of aerosol insecticides by the armed forces, their history, compotion, and method of use.

Following the address by Dr. Goodhue before the Forum, a testimonial dinner was tendered him by S. B. Penick & Co. at the Waldorf-Astoria. Those present, all associated with the production of materials and equipment for the government aerosol insecticide program, included: Dr. Goodhue, and W. V. Cadmus of Armstrong Engineering Co., New York; W.W. Rhodes of Kenetic Chemicals, Inc., Wilmington; Dr. Harvey A. Seil, of Seil, Putt & Rusby, New York; P. Y. Danley and Ira J. Purdy

DR. LYLE D. GOODHUE

of Westinghouse Electric & Manufacturing Co., Springfield, Mass.; Frederick Preu of Shell Oil Co., New York; Dr. Thomas A. Lewis, Albert D. Penick, Frederick Rauch, Dr. R. R. Blumenthal, Dr. D. C. Beach, B. A. LaForge, and Harold Noble of S. B. Penick & Co.

◆

Flexrock Co., Phila., Moves

Flexrock Co., maker of floor repair and building maintenance materials, Philadelphia, is now located in new quarters at Filbert and Cuthbert Sts., West of 36th, Philadelphia 4.

To Amend M-133

A bulletin of the National Association of Insecticide and Disinfectant Manufacturers, dated November 23, indicates that order M-133 controlling use of rotenone insecticides, is shortly to be amended. It is understood that the War Production Board will issue a completely revised text of M-133 after it receives full information on the insecticide program of the War Food Administration.

◆

Creco Purchases Standard Sanitary

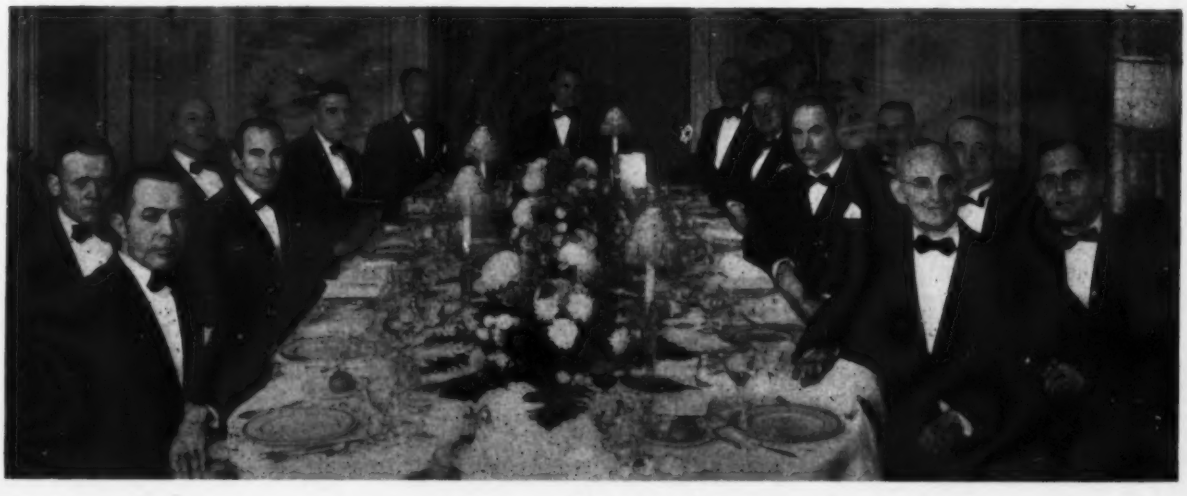
Creco Co., manufacturers and distributors of all types of soap and sanitary products, Long Island City, N. Y., has just purchased Standard Sanitary Specialties Co., Jersey City, N. J., according to an announcement on Nov. 6. In making the announcement for Creco, Benjamin Newman stated that the death of William E. Byer, former head of Standard Sanitary Specialties, makes it impossible for the company to carry on. Creco has taken over the company's assets, including stock on hand throughout the states of New York, New Jersey and Pennsylvania, as well as customer lists, good will, etc.

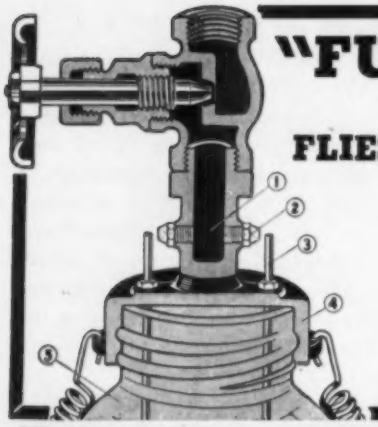
◆

Chicago PCO Dies

Homer C. McDaniels, owner of the International Exterminator Co., Chicago, died at Henrotin Hospital, Nov. 4, following a heart attack. Mr. McDaniels, who was 48 years old is survived by his widow and two sons.

S. B. Penick & Co. Honor Dr. Goodhue in testimonial dinner at Waldorf-Astoria.





"FUMERAL" POWER SPRAYERS

INSTANT DESTRUCTION OF

FLIES—ROACHES AND ALL OTHER INSECTS

(1) Operated by factory steam or air pressure. (2) Four Fumeral pressure nozzles which account for Fumeral's well-known efficiency and economy. (3) Removable liquid tubes, easy to clean and to adjust. (4) Solid bronze casting of simple construction.—Safety screw thread.—High-grade needle valve. (5) No pressure is applied to the standard jar of half gallon capacity.—Write for details.

Pat. Sept., 1934—Aug., 1938

CATALOGUED AND SOLD SINCE 1932 BY LEADING EQUIPMENT JOBBERS FROM COAST TO COAST. HIGHLY RECOMMENDED BY INSECTICIDE MANUFACTURERS—YOUR GUARANTEE OF DEPENDABILITY AND QUALITY.

FUMERAL COMPANY — RACINE, WIS.

SINCE

1874

PHOSPHOROUS PASTE

FOR ROACHES and RATS

J-O PASTE (Type "O"): Out of our 69 years experience, we offer this Phosphorous Paste to meet every need. Consider these five advantages: (1) Type "O" Paste remains soft for months after application; (2) It embodies an attractive lure for roaches and rats; (3) It does not form a hard shell, remains penetrable; (4) It is miscible with water in all proportions; (5) It is unexcelled for the large specie of roach (American, etc.) and many different types of pest control work.

J-O PASTE (Regular): For the small species of roach (German, etc.) J-O Regular Paste is unexcelled, and has been used for this purpose with outstanding success for the past 69 years.

Both types of J-O Phosphorous Paste used extensively for elimination of rats.

Write for Price List

JOHN OPITZ, INC.

50-14 39th Street Long Island City, N. Y.

Manufacturers of Exterminating Products Since 1874

TAR ACID OIL

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DISINFECTANTS

and

CLEANING COMPOUNDS

Unusually High in Tar Acids

White-Emulsion and Pink-Emulsion Grades

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LOW TEMPERATURE COAL TAR

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Producers and Refiners of Coal Tar and Its Products.

C. V. WAX "A"

(Replaces Carnauba)

DOMESTIC OZOKERITE

A. G. BLACK

(Replaces Montan)

DOMESTIC CERESINE

F. W. STEADMAN COMPANY

59-61 Pearl Street **Waxes of Every Description** **New York City**

— SALES AGENTS —

N. S. Wilson & Sons	R. Peltz Co.	L. R. Cross	Arthur C. Trask Co.	Clifford L. Iorns Co.
150 Causeway St., Boston	33 Kenilworth St., Philadelphia	Syracuse, N. Y.	4103 S. LaSalle St., Chicago	216 S. 7th St., St. Louis

U. S. Buys All Brazil Pyrethrum

The entire Brazilian crop of pyrethrum flowers until Dec. 31, 1945 has been sold to the United States, it was made public recently. An agreement providing for the sale of the pyrethrum flower crop was signed by Brazilian Foreign Minister Oswaldo Aranha and Jefferson Caffery, American Ambassador to Brazil, Oct. 30. Under the agreement Brazil retains such supply as is needed for domestic use and sales also can be made to other countries if Brazil and the United States mutually agree.

Monarch Polish Moves

Monarch Polish Co., formerly of 451 No. Fairview St., St. Paul, Minn., makers of auto cleaners and waxes, are now located at 2108 Temple Court, 4, St. Paul.

Dr. E. N. Woodbury Joins Hercules

Dr. E. N. Woodbury, formerly of the Crop Protection Institute of Pennsylvania State College, was recently appointed by Hercules Powder Co., Wilmington, Del., to assist Friar M. Thompson, Jr., company entomologist. Dr. Woodbury will devote his attention principally to "Thanite" and other synthetic toxic agents for insecticides. An Ohioan, he is a graduate of Ohio Wesleyan and Ohio State Universities, and for two years held the National Association of Insecticide and Disinfectant Manufacturers' fellowship.

DR. E. N. WOODBURY

"Order Insecticides Early"—WFA

The War Food Administration has asked farmers and distributors to place their orders for next year's insecticides and fungicides early. In this way, orderly manufacture, transportation, storage and delivery will be facilitated throughout the 1944 crop season, it is hoped. With the exceptions of rotenone and pyrethrum, adequate raw materials supplies are said to be available. This, in spite of a big increase in demand due to greater crop quotas and the desire to provide better protection for crops and gardens.

Pentawax Becomes Multiwax

Petroleum Specialties, Inc., New York, has decided upon a change in the trade name on its new series of micro-crystalline petroleum waxes whose introduction was reported in *Soap & Sanitary Chemicals* last month. Because of a trade mark conflict, it was found necessary to abandon the name "Pentawax" originally selected. The new series will be marketed under the name "Multiwax."

Introducing

MULTIWAX

Micro-Crystalline Petroleum Wax

For Full Information Write to

Petroleum Specialties, Inc.

570 Lexington Avenue — New York 22, N. Y.

PLaza 8-2644

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SAFETY HAND SOAP

(Powdered)

A money-maker for alert jobbers calling on industrial plants and institutions.

- ★ Hygienically safe—fast and economical
- ★ Non-abrasive, vegetable oil base
- ★ Soothing with fine after-effect
- ★ Tested and approved by millions of safe washups in plants throughout the country
- ★ Unsurpassed quality and value
- ★ Free samples available for estabiished jobbers

Other items in the Skotch Products line include dish-washing compounds, medium and heavy duty cleaners, liquid soap concentrate, special formula compounds and powdered soap dispensers.

SKOTCH PRODUCTS CORP.

1220 W. SIXTH ST. CLEVELAND, OHIO

Simple — Practical — Durable — Inexpensive

The 4 in 1 Applicator consists of but three parts:

1—A top quality sleeve-like wool pad;
2—A one piece hardwood block that needs no bolts, no nuts, no metal fastenings of any kind;
3—A hardwood threaded handle.

The 4 in 1 Applicator gives you more square inches of usable wool pad for your money.
The 4 in 1 Applicator insures perfect application of your floor waxes, seals and other finishes for every type of floor.

Profitable to Use — Profitable to Sell

Used and recommended by maintenance experts nationwide.

American Standard Manufacturing Company
2509-2513 South Green Street Chicago 8, Ill.

CROSBY
THE MARK OF QUALITY

PALE WOOD

ROSINS

They will help the soapmaker "stretch" his fats.

CROSBY NAVAL STORES, INC.
PICAYUNE, MISSISSIPPI

MILITARY CAMPS PROVIDE PROPER SANITATION *with*

ADAM A. BREUER'S

ELECTRIC INSECTICIDE SPRAYERS

Portable — Fast — Efficient

PROTECTING the health of the armed forces thru proper sanitation in War Camps is an essential step. Consequently, such camps are adopting the rapid, efficient, portable method of spraying insecticides, namely, the Adam A. Breuer's ELECTRIC INSECTICIDE SPRAYER. It sprays insecticides for killing insects, vermin, etc. It shoots liquid a distance of twenty feet, thus proving its powerful, effective action. *Write for complete details, specifying your problems and how many Sprayers you will require.*

(We do not sell insecticides. Our business is the manufacture of Sprayers. (Patented in U. S. A. and foreign countries.))

BREUER ELECTRIC MFG. CO.
5118 N. RAVENSWOOD AVE. CHICAGO, ILL.

Allow Rotenone Content Increase

Several permissible changes in rotenone content for commercial size insecticide packages for next year's season have been revealed recently by the War Production Board. These include: 1.) an increase of three-fourths of one per cent in the rotenone content of finished dusts packed in containers holding more than five pounds for use as dust on permitted commercial crops; 2.) rotenone content may be increased to one per cent in dusts for the control of European corn borer; 3.) formerly restrictions limited the rotenone content of insecticides for all purposes to one half of one per cent which still hold for packages of five pounds or under in the form of dust, or one pint or less in the form of liquid, but there are no longer any restrictions on rotenone's use for food crops, nor are purchasers required to certify intended use; 4.) the use of rotenone for the control of cattle grubs and lice has been made specific in the newly issued directive, and 5.) cabbage has been added to the list of commercial crops on which rotenone insecticides may be used.

R. S. Solinsky Leaves WPB

Robert S. Solinsky, Chief of the Metal Can and Tube Section of the War Production Board, resigned that position late last month. He had been with the WPB since the early days of the Containers Division. Mr. Solinsky returns to Cans, Inc., Chicago, of which he is president. He has been connected with the can industry for over 35 years, having started his career with American Can Co., and serving successively as sales manager for Continental Can Co., in Chicago, central sales manager and later assistant vice-president of National Can Corp.

Ask More Copper Insecticides

As a protective measure for increased farm crops, the War Food Administration is reported to be preparing to ask the War Production Board for a 43 per cent increase in copper allocations for copper fungicides.

Homer C. McDaniel Dies

Homer C. McDaniel, head of International Exterminator Co., Chicago, and an active member of the National Pest Control Association, died suddenly of an internal hemorrhage, Nov. 4.

J.N.T. Moves General Offices

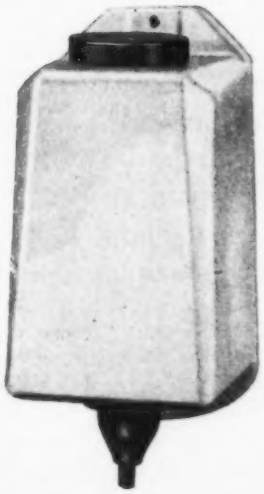
J. N. T. Mfg. Co., furniture polish and cleaner makers, New York, recently moved its general offices to 1440 Broadway, where its sales office is now located. A branch office has also been opened by the company in Chicago at 30 West Washington Blvd.

New Plastic Floor Wax

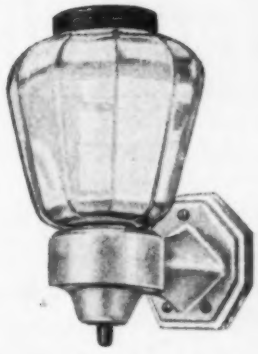
Twi-Laq Chemical Co., Brooklyn, N. Y., wax manufacturers, has announced the development of a new type emulsion floor wax. In combination with carnauba wax, the manufacturer states that a plastic material melting at 283° F. is used, resulting in a tougher and longer-wearing wax film on the floor. The new type wax is also said to be more highly resistant

Gleaming White Porcelain

SOAP DISPENSERS



PC-1. (Right) Standard design of unusual beauty, sturdy and strong with crystal glass bowl and black closure.
PL-2. (Left) White heavy porcelain, durable and easily cleaned. 24 oz. capacity, with black spout and closure.
Both dispensers equipped with Palmer patent Neoprene contact valve, acid, alkali and oil proof. Sediment cannot prevent valve seating, assuring permanent non-leak dispenser. Let us send literature and prices.



Also manufacturers of an outstanding Powder Soap Dispenser which will be available to the trade when present war demand is satisfied.

Manufacturers of Sanitary Appliances for the Trade Since 1910

Palmer Products, Inc.

WAUKESHA, WISCONSIN

PERFUMERS

BASIC MATERIALS

Burton Bush

We specialize in originating products to meet unusual perfume requirements for the soap and sanitary chemical industry.

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FOR FLOOR MACHINES

A "Must" for Floor Maintenance

BRAID-O-PAD has steel wool strands running in all directions, and these strands are continually presenting fresh cutting surfaces. During the entire life of this pad, there is no loss of efficiency. This is because the pad retains its original shape and the braided strands of steel wool remain in the same relation to each other at all times during its use.

AMERICAN STEEL WOOL MFG. CO. INC.

42-24 ORCHARD ST. *The Pioneer Steel Wool Manufacturer* LONG ISLAND CITY, N.Y.

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THE WES-KEM-CO LINE OF CLEANING PRODUCTS

"Tops" in Quality — Low in Cost

- SOAP POWDER •
- LIQUID HAND SOAP •
- LIQUID SCRUB SOAP •
- VEGETABLE OIL SOAP •
- PINE OIL DISINFECTANT •
- HAND AND MACHINE DISH WASHING COMPOUNDS •

If any of your customers have a cleaning problem that is peculiar to their plant or operation, submit it to us and our laboratories will work out a WES-KEM-CO SPECIAL to eliminate their difficulty.

WESTERN CHEMICAL & MFG. CO.

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to water, less slippery, and to give a higher gloss than a straight carnauba base water wax. In view of the present high price of carnauba, the new wax is being produced at a lower cost than the carnauba products. The manufacturer is located at 25 North Portland Ave., Brooklyn, N. Y.

Ireland Joins Brown Bigelow

Dr. Frank Ireland, for the past seven and one-half years chemist in charge of the laboratory of McLaughlin Gormley King Co., manufacturing chemists, importers and millers, Minneapolis, resigned recently to accept a position at Brown Bigelow Co., St. Paul.

Capitol Chemical Workers Killed

Two employees of Capitol Chemical Co., Chicago, were found dead on a railroad track near the factory on Armistice Day, last month. Police said they had evidently been struck by a train while taking a short cut to their work.

GEORGE R. ELLIOTT
of Ransford Insecticide Co., re-elected president of National Pest Control Association at the recent annual meeting of the group in St. Louis.

Amord Chemical Co. Moves

Amord Chemical Co., disinfectant, polishes, insecticide and deodorant house, Brooklyn, recently moved to 999 Jefferson Ave., Brooklyn 21.

Named to Servicemen's Committee

George Moore, traffic manager for Hild Floor Machine Co., Chicago, has been named chairman of the Servicemen's Committee of Chicago's Freight Traffic Institute, with the responsibility of seeing to it that every alumnus of the Institute now in the armed services receives at least one letter a month from a member.

Held In Fumigation Death

Arthur Caleen, 75 Myrtle Ave., North Plainfield, N. J., was held last month for Grand Jury action on a charge of manslaughter as a result of the death from gas fumes of two-year-old Anthony Zarrara. Caleen had fumigated the Zarrara home Saturday, Nov. 20. Mr. and Mrs. Joseph Zarrara returned with their six children about 10 p.m. Anthony, their youngest child was found unconscious about ten o'clock the following morning. The police rescue squad took the child to Muhlenberg Hospital, where he died about 11 a.m. Dr. C. A. Brokaw, county physician, said after an autopsy that death was caused by gaseous fumes. Caleen had used a cyanide preparation.

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.
Manufacturing Chemists, Importers, Exporters
799 Greenwich St. New York City
Cable Address: "Pylamco"

Peck's OIL SOAPS

DELAYS . . . In spite of war demands, raw material and other difficulties, PECK'S PRODUCTS is still doing its utmost to supply promptly the needs of its regular customers. Delays in delivery are beyond our control, and we ask our old customers to bear with us under present conditions.

• • • • •

PECK'S Oil Soaps and other soap specialties. disinfectants, floor waxes . . . a full line of sanitary specialties manufactured by PECK for sanitary specialists.

Peck's PRODUCTS COMPANY
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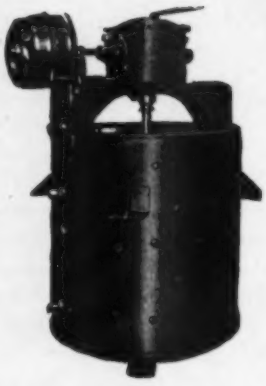
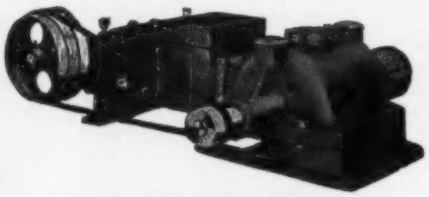
NEW YORK . . . . KANSAS CITY

Everything in Soaps, Disinfectants, Waxes, Etc.

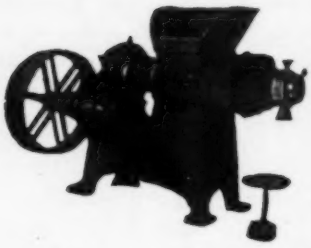
Special Offerings of **SOAP MACHINERY** *Completely Rebuilt!*



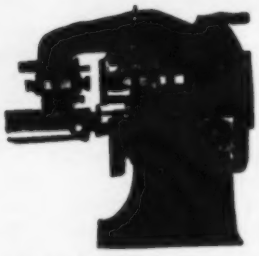
Newman's BRAND NEW Steel Steam Jacketed SOAP CRUTCHERS Sizes 1,000 to 10,000 lbs.



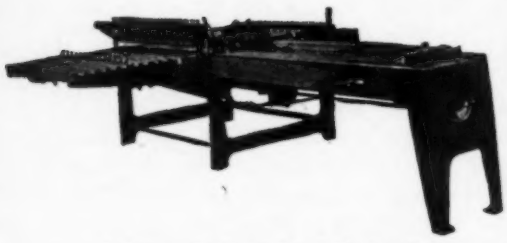
SOAP POWDER MILLS
Sizes 10A and 14



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

•

Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

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ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
Ralston Automatic Soap Presses.
Scouring Soap Presses.
Empire State, Dopp & Crosby Foot Presses.
2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
H-A 4 and 5 roll Steel Mills.
H-A Automatic and Hand-Power slabbers.
Proctor & Schwartz Bar Soap Dryers.
Blanchard No. 10-A and No. 14 Soap Powder Mills.
J. H. Day Jaw Soap Crusher.
H-A 6, 8 and 10 inch Single Screw Plodders.
Allbright-Nell 10 inch Plodders.
Filling and Weighing Machine for Flakes, Powders, etc.
Steel Soap frames, all sizes.
Steam Jacketed Soap Remelters.
Automatic Soap Wrapping Machines.
Glycerin Evaporators, Pumps.
Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
Perrin 18 inch Filter Press with Jacketed Plates.
Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
Day Grinding and Sifting Machinery.
Schultz-O'Neill Mills.
Day Pony Mixers.
Gardiner Sifter and Mixer.
Proctor & Schwartz large roll Soap Chip Dryers complete.
Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
Day Talcum Powder Mixers.
All types and sizes—Tanks and Kettles.
Ralston and H-A Automatic Cutting Tables.
Soap Dies for Foot and Automatic Presses.
Broughton Soap Powder Mixers.
Williams Crutcher and Pulverizer.
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Send us a list of your surplus equipment—we buy separate units or complete plants.

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Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.

Chemical Analyses and Tests of All Kinds

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Classified Advertising — All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap & Sanitary Chemicals,* 254 West 31st St., New York.

Positions Wanted

Chemist:—Man experienced in glycerine, fatty acids, soaps, and alkali production analysis control, is open for temporary or part-time engagement shortly after January 1st. Can aid in revamping and replacing plant set-up and processes. For further details communicate with Box No. 628, care *Soap & Sanitary Chemicals.*

Supt. Soapmaker and Chemist wants position. Anything in the soap line and glycerine. Address Box No. 616, care *Soap & Sanitary Chemicals.*

Waxmaker—15 years of experience in all kinds of waxes, polishes, etc., wants permanent responsible position with advancement opportunity in well equipped factory, over draft age, still employed. Address Box No. 623, care *Soap & Sanitary Chemicals.*

Positions Open

Practical Soap Maker—Wanted by a well established and growing concern in a city and vicinity of one-half million people, an all around powered and yellow bar soap maker, a man who knows his business and willing to prove his qualifications, to manufacture soap and to superintend the plant. To such a man who is willing to work on a small salary to start and to take his chances to grow as his efforts warrant, this institution offers a most glowing opportunity. Age no barrier, but experience in plant construction will be helpful. Address Box No. 625, care *Soap & Sanitary Chemicals.*

Miscellaneous

Wanted — Established soap brand. We are interested in purchasing a going brand of toilet or medicated soap to add to our own line. Product should preferably be one on which some advertising has been done and for which there is an established market that can be built upon. Address full details in confidence to Box No. 626, care *Soap & Sanitary Chemicals.*

GREATER *Kills* with CERTOX

REG. U. S. PAT. OFF.

Rodent Seed, Ant Jelly, Arsenic, Carbolic, Pyrethrum, Cresylic, Red Squill, Derris Powder, and other effective chemicals that do a thorough job for the Pest Controller. The quality of CERTOX products remains unaffected by the national emergency. Prices, too, are near normal.

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All CERTOX products are manufactured according to exacting specifications under personal supervision of I. H. LUTTAN, B. S. A., Entomologist.

SPECIAL CONTRACT PRICES Available to Cover your Annual Needs.

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"The Industry has exhausted its stocks of imported Essential Oils and has placed increasing reliance on Synthetic Oils."—*Extract from the New York Times, August 22, 1943.*

Whatever may be your requirements in Essential Oils, consult STANDARD SYNTHETICS, INC., 119 West 25th Street, New York City, who can supply you with either Natural Oils or Synthetic Substitutes if preferred.

You can use Imitation Essential Oils in exactly the same way as the Natural products and get excellent results.

Please write for samples of:—

- Synthetic Cassia Oil
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- Synthetic Cocoanut Flavor
- Synthetic Powdered Cinnamon
- Synthetic Lemon Oil
- Synthetic Lime Oil
- Synthetic Vanilla Extract
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These and many others are offered at low prices, with special quotations for contracts.

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Let us manufacture it for you!

Those products which you are not equipped to manufacture yourself . . . those odd items which do not fit into your plant . . . mosquito repellent, flea powder, salves, ointments, tube filling, powder filling, etc. . . . we buy materials, containers, pack, store, and ship your specialties . . . most modern methods and equipment . . . strictly confidential . . . and our charges are low . . . consult us without obligation.

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Crutchers	Foot and Automatic Soap Presses	Filter Presses
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TO END ALL CORROSION PROBLEMS

Saran is a tough thermoplastic originally made to replace such strategic war materials as aluminum, stainless steel, nickel, copper, brass, tin and rubber. Now found adaptable to a wide range of uses in product designing, food processing and wherever non-corrosive materials are necessary. Its insulating qualities, flexibility and ease of handling make it extremely valuable in installations dealing with oils, gases, air, water and corrosive chemicals. It is available in tube, pipe, sheet, rod and molded fittings.

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YOU DO NOT NEED ALCOHOL

A quality product unequalled for use in the manufacture of insecticides, disinfectants, bath oils, liquid soaps, etc.

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Party with factory—equipment has real opportunity for mutual partner who has push, to manufacture soaps, general line of cleansers, waxes, disinfectants. No debts. Address Box No. 621, care *Soap & Sanitary Chemicals.*

Will Purchase Immediately — Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 622, care *Soap & Sanitary Chemicals.*

Roach Powder—For sale odd lot prepared roach powder about twenty barrels composed approximately half tinted fluffy sodium silicofluoride balance suitable inert material. Any or all part of lot. For further details write to Box No. 627, care *Soap & Sanitary Chemicals.*

For Sale: 2—5 Roll water cooled inclined steel roller mills, 16" dia x 40" face. Allbright-Neil 3 x 8 ft. Flaking (chilling) Roll unit. Houchin-Aiken Foot Presses; 600 and 1500 lb. Soap Frames; Cutting Tables; Plodders, 12 x 30 and 16 x 40 Three Roll Water Cooled Steel Mills; 4 Roll Stone Mills; Dryers; Chippers; Powder Fillers; Mixers; Grinders, Filter Presses; Disc Filters; Pumps, etc. Send for Soap Bulletin No. 402. We Buy Your Surplus Equipment for Cash. Stein Equipment Corp., 426 Broome Street, New York City.

For Sale: 2—4 Roll Granite Soap Mills; 4—Foote Power Soap Presses; 1—Jones Pin Die Press; 1—Ideal Amalgamator; 1 — 6" Plodder; 1 — Perfection 1500 lb. Soap Crutcher; Blanchard Soap Powder Mills; Cutting Tables; Slabbers; Filter Presses, 12" to 36" square; Kettles, 15 to 2500 gal.; Filling, Labeling and Wrapping Machine; Pumps; Tanks; etc. Cash buyers of your surplus equipment. Brill Equipment Company, 183 Varick Street, New York City.

For Sale: 7500 pounds Pure solid Red Oil Soap. Address Enterprise Mill Soap Works, 2229 N. 12th St., Philadelphia, Pa.

Floor Brushes — We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

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Pyrethrins in Camomile

Variations in the drying temperatures and conditions, exerted no real influence on the pyrethrin content of Dalmatian camomile. However, the pyrethrins are destroyed in several days by the simultaneous action of sunlight, high temperature and air currents. Drying of a thin layer requires 4-5 days in sunny weather. Drying can also be achieved in several hours at 60-80° C. in special equipment. A good quality of dried camomile flowers can be rubbed between the fingers into a coarse granular powder. V. S. Konovalov and M. G. Yosifova. Farmatsiya 1941, No. 5, 31-3.

. . . *Official Test Insecticide (O.T.I.)*

SUPPLIES of the 1943 Official Test Insecticide for evaluating fly sprays by the Official Peet-Grady Method are available only from the office of this Association. The O.T.I. is priced at $5.00 per dozen six-ounce bottles, plus shipping costs, to members of this Association. To others, there is an additional service charge of $1.00 per dozen. Single bottles are $1.00 each. Check with order is required.

The 1943 Official Test Insecticide is required for all official testing of fly sprays by the Peet-Grady Method for the period from June 1, 1943 through May 31, 1944.

▼

National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street — New York

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INDEX

*** For further details see announcement in 1943 SOAP BLUE BOOK**

*American-British Chemical Supplies....143A
American Standard Mfg. Co.... 152
American Steel Wool Mfg. Co.... 154
Ampion Corp. 68
Anchor-Hocking Glass Co.... 101
*Aridor Company 77
*Aromatic Products, Inc....86, 87
*Associated Chemists, Inc.... 75
*Baird & McGuire, Inc....90, 106
*Barrett Co. 144
Bobrick Mfg. Co.... 47
Borne Scrymser Co.... 159
*Breuer Electric Mfg. Co.... 152
Buckingham Wax Co.... 103
Bush Aromatics 154
Candy & Co.... 130
Canner, The 120
*Carbide & Carbon Chemicals Corp.... 16
Chemical Mfg. Co.... 95
Chemical Sales Corp.... 148
Chemical Supply Co.... 140
John A. Chew, Inc....Nov.
*Antoine Chiris Co....Oct.
*Clifton Chemical Co.... 105
*Columbia Chemical Division....Nov.
Compagnie Parento 143A
*Consolidated Products Co.... 158
*Continental Can Co....Facing 92
Continental Car-Na-Var Corp....Nov.
Crosby Naval Stores.... 152
*Crown Can Co.... 48
*Davies-Young Soap Co.... 15
*Derris, Inc. 128
Diamond Alkali Co.... 11
Wm. Diehl & Co.... 154
*Dodge & Olcott Co....2nd Cover, 82, 83
*Dow Chemical Co.... 6
P. R. Dreyer Inc.... 99
*E. I. du Pont de Nemours & Co....52, 124
*Eastern Industries.... Nov.
Emery Industries, Inc.... Nov.
Emulsol Corp. 136
*Federal Varnish Co.... 122
*Felton Chemical Co....14, 76
Filtrol Corporation.... 68
*Firmenich & Co.... 4th Cover
First Machinery Corp.... 136
*Florasynth Laboratories 118
Fritzsche Brothers, Inc.... 44
*Fuld Brothers.... 3
Fumeral Co.... 150
*General Drug Co.... 4
*R. Gesell, Inc.... 158
*Givaudan-Delawanna, Inc.... 12, 13
A. Gross & Co.... 58
Haag Laboratories.... Nov.
W. C. Hardesty Co.... 72
Hercules Powder Co.... 17, Facing 93, 112
Hodgman Rubber Co.... 159
*Hooker Electrochemical Co.... 20
Hospital Management.... 94
*Houchin Machinery Co.... 64
Huber Machine Co.... Nov.
*Hysan Products Co.... 9
Industrial Chemical Sales Division
W. Va. Pulp & Paper Co.... 10, 60
*Innis, Speiden & Co.... 138
Institutions Magazine.... 100
Interstate Color Co.... Nov.
R. A. Jones & Co.... 22
Ken-Ya-Pye 92
Karl Kiefer Machine Co....Oct.
*Koppers Co.... 18
Kranich Soap Co.... 144
*Lancaster, Allwine & Rommel.... 157
*J. M. Lehmann Co.... 58
*Geo. Lueders & Co.... 50
*Magnus, Mabee & Reynard, Inc.... 84, 85
*N. I. Malmstrom & Co.... 66
M & H Laboratories.... 143C
Maryland Glass Corp.... Oct.
Mirvale Chem. Co.... Nov.
Monsanto Chemical Corp.... Nov.
National Can Co.... 80, 81
National Wax Refining Co.... 7
*Newman Tallow & Soap Machinery Co.... 156
Newport Industries, Inc.... Oct.
*Niagara Alkali Co.... Facing 46
Norda Essential Oil & Chemical Co.... 40
Olsen Publishing Co.... 91
John Opitz, Inc.... 150
*Orbis Products Co.... Nov.
Owens-Illinois Glass Co.... Nov.
Palmer Products, Inc.... 153
Pecks Products Co.... 155
*S. B. Penick & Co.... 97
*Pennsylvania Refining Co.... 148
Per-Mo Mothproof Co.... 148
Petroleum Specialties, Inc.... 151
Philadelphia Quartz Co.... 42
Philipp Brothers, Inc.... Nov.
*Pittsburgh Coal Carbonization Co.... 150
*Pittsburgh Plate Glass Co.... Nov.
*John Powell & Co.... 78, 79
*R. J. Prentiss & Co.... 93
*Proctor & Schwartz, Inc.... 72
Pumice Corp. of America.... 70
*Pylam Products Co.... 155
Chas. L. Read & Co., Inc.... Nov.
*Reilly Tar & Chemical Co.... 142
W. C. Ritchie & Co.... August
*Rohm & Haas Co.... 116
Saltcake Sales Corp.... Nov.
Sanitary Soap Co.... 142
*C. G. Sargent's Sons Corp.... Nov.
*Schimmel & Co.... 126
F. E. Schundler & Co., Inc.... 54
Seil, Putt & Rusby.... 157
*Skinner & Sherman.... 157
Skotch Products Corp.... 152
Foster D. Snell.... 157
*Solvay Sales Corp.... 102
*L. Sonneborn Sons Inc.... 140
Standard Alcohol Co.... 134
Standard Silicate Co.... 11
*Standard Synthetics, Inc.... 21, 158
Stauffer Chemical Co....143C
F. W. Steadman Co.... 150
Stillwell & Gladding.... 157
Stokes & Smith Co.... Nov.
Stroock & Wittenberg.... 114
*Tar & Chem. Division Koppers Co.... 18
*Tombarel Products Corp.... 8
Triangle Package Machinery Co.... 70
Twi-Laq Chemical Co.... 132
Jos. Turner & Co.... 38
*Uncle Sam Chemical Co.... Nov.
Ungerer & Co.... 3rd Cover
*Union Carbide & Carbon Corp.... 16
U. S. Industrial Chemicals, Inc.... Between 62-63
*Van Ameringen-Haebler, Inc.... Front Cover, 96
R. T. Vanderbilt Co.... 134
*Velsicol Corp.... 88,89
*T. F. Washburn Co.... 138
*Welch, Holme & Clark Co.... 56
Western Chem. & Mfg. Co.... 154
*White Tar Co. of N. J.... 18
Whitmire Research Corp.... 98
Whittaker, Clark & Daniels.... 70
*Woburn Degreasing Co.... 56
G. H. Wood & Co.... 19
*Wurster & Sanger, Inc.... 157
Wyandotte Chemicals Corp.... Nov.
York Chemical Co.... 158

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.

. . . Up a Tree

EVEN through war conditions may have driven your business "up a tree" as far as your regular customers are concerned, — and though you may still have little to sell, — it is undoubtedly wise to keep looking to the future, — to keep an eye on your post-war markets and to maintain contact with your peace-time customers through regular advertising in representative trade publications.

If you would maintain your old contacts, — and establish new ones, — for post-war business in the fields of soap products, detergents, insecticides, and sanitary and chemical specialties, we suggest advertising now in

SOAP *and Sanitary Chemicals*

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Member Audit Bureau of Circulations

Tale Ends

OVER the back fence, we hear that a number of manufacturers of new non-soap cleansers of one sort or another brought to market over the past six months in anticipation of soap rationing, are somewhat disappointed by the turn of events in soap production quotas. They had hoped for a big demand as a replacement for scarce and rationed soap. In spite of their disappointment, we remind them that the war is not over yet,—although we must admit that the toughest problem of soap supplies appears to be solved temporarily at least.

* * *

In keeping with congressional tradition, a levy of ten per cent on toilet soaps was included in the new tax bill,—and then kicked overboard by the Ways and Means Committee.

* * *

Our estimate of 1944 rotenone supplies as published last month was apparently a trifle optimistic, we are convinced, if we can read between the lines of correspondence from both importers and distributors. And some of the remarks which were addressed to us over the telephone were even more convincing than the correspondence. The general impression we obtained from all this was that our 1944 rotenone estimates were a bit too rosy.

* * *

Pyrethrum is again going into Army louse powder in a small way, says a Washington whisper. Seems that D.D.T. louse powder is not coming through fast enough to suit the Army Q.M.

* * *

How to waste time, — and money! Go to all the advisory and other industry group meetings in Washington to which you are invited by WPB, OPA, and other alphabetical bureaus, and for which there is invariably little or no advance preparation by the bureaus. It's a sure formula. Seldom misses!

* * *

U. S. War Bonds are just as good an investment now as they were when all the ballyhoo was on!

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AS AN effective substitute for Italian Oil Bergamot, we suggest UNCO SIMILE BERGAMOT in perfumes for fine toilet soaps, shave creams, lotions, toilet waters, creams . . . because

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